# Geometry – Model No 1

## Q1 Choose the correct answer:

**(1)** The length of two sides in an isosceles triangle are **4** cm , **9** cm, then the length of the third side = …………. cm

a) 4　b) 5　c) 9　d) 13

**(2)** If the measure of two angles in a triangle are $55^{\circ}$ , $70^{\circ}$, then the triangle is ……………………… triangle

a) Isosceles　b) Equilateral　c) Scalene　d) Obtuse

**(3)** The measure of the exterior angle of an equilateral triangle= ….$^{\circ}$

a) 60　b) 120　c) 180　d) 360

**(4)** In $\Delta$ ABC, AC + BC – AB ………….. zero

a) $\leq$　b) $>$　c) $=$　d) $<$

**(5)** The length of hypotenuse = ……….. the length of the median whose drawn from the vertex of right angle

a) Half　b) Third　c) Quarter　d) Twice

**(6)** If X $\in$ axis of symmetry of $\overline{BC}$, then $\overline{XB}$ ……. $\overline{XC}$

a) $>$　b) $=$　c) $<$　d) $\equiv$

## Q2 Complete each of the following:

1) The intersecting point of the medians of triangle divide each of them with ratio **1** : ……….. From the vertex.

2) In $\Delta$ ABC, AB = 6 cm , BC = 8 cm, AC = 4 cm, then m($\angle$C) > m(….)

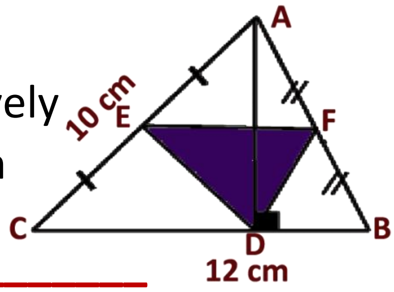
3) The longest side in the right angled-triangle is ………….

4) If ABCD is a parallelogram, m($\angle$A)+m($\angle$C)=$110^{\circ}$, then m($\angle$D)=..

5) If the length of any side of a triangle = $\frac{1}{3}$ perimeter of triangle, then the triangle has ………………… axes of symmetry

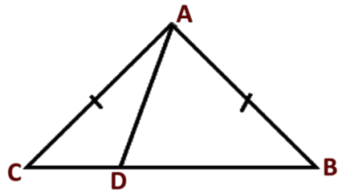
## Q3 A) In the opposite figure:

$\Delta$ ABC , F,E are midpoint of $\overline{AB}$ , $\overline{AC}$ respectively
$\overline{AD} \perp \overline{BC}$, AB = 8 cm , AC = 10 cm, BC = 12 cm
**Find** the perimeter of $\Delta$ DFE




## B) In the opposite figure:

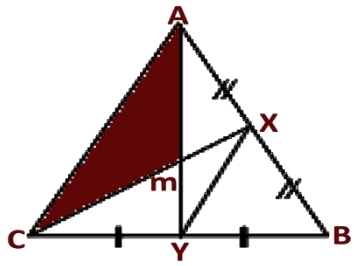
AB = AC,
**Prove that:** AB > AD




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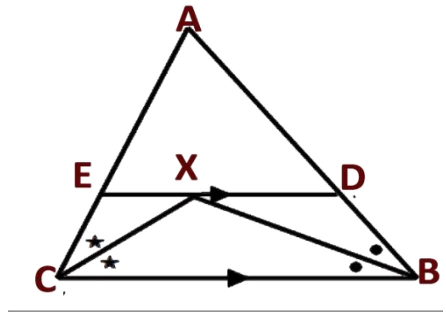
## Q4 A) In the opposite figure:

X , Y midpoints of $\overline{AB}$ , $\overline{BC}$ respectively
$\overline{AY} \cap \overline{XC}$ = {m}, XY = 6 cm, MY = 4 cm
XC = 9 cm. **Find the perimeter of $\Delta$ ABC**




## B) In the opposite figure:

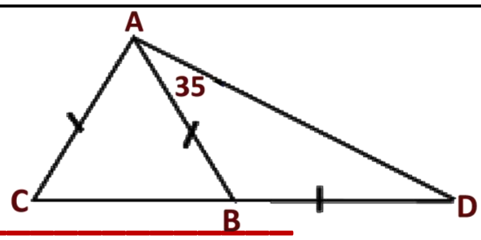
AB = 8 cm, AC = 6cm
$\overline{DE}$ // $\overline{BC}$, $\overline{BX}$ bisects $\angle$ ( DBC) ,
$\overline{CX}$ bisects $\angle$ ( BCE)
**Find the area of $\Delta$ ADE**




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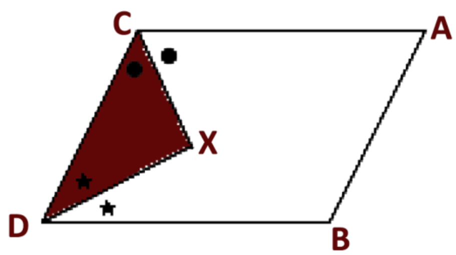
## Q5 A) In the opposite figure:

AB = BC = AC , m ( $\angle$ DAB ) = 35°
Find by proof m ( $\angle$ BAC)




## B) In the opposite figure:

ABCD is a parallelogram,
$\overline{XD}$ Bisects $\angle$ ( BDC), $\overline{XC}$ Bisects $\angle$ ( ACD)
**Prove that: AB > XC**




*End of the questions*

# Geometry – Model No 2

## Q1 *Choose the correct answer:*

**(1)** In $\Delta$ ABC, $\overline{AD}$ is median, m is concurrence point, then AM=.... AD

a) 2 b) $\frac{1}{2}$ c) $\frac{1}{3}$ d) $\frac{2}{3}$

**(2)** $\Delta$ XYZ, XY = XZ, then the exterior angle at Vertex **Z** is ........

a) Acute b) Right c) Obtuse d) Reflex

**(3)** A triangle its sides **4** cm, **7** cm, **X** cm, then X $\in$ .........

a) [ 3 , 11 ] b) ] 3 , 11 [ c) [ 3 , 11[ d) ] 3 , 11 ]

**(4)** The triangle has two angles of measure $\mathbf{50^o}$, $\mathbf{60^o}$, then the number of axes of symmetry .........................

a) Zero b) 1 c) 2 d) 3

**(5)** Length of hypotenuse= .......... the side opposite to $\mathbf{30^o}$

a) 2 b) $\frac{1}{2}$ c) $\frac{1}{3}$ d) 3

**(6)** In $\Delta$ ABC, AB = AC, m ( $\angle$ A) = $50^o$. then BC .......... AB

a) < b) = c) > d) $\equiv$

## Q2 *Complete each of the following:*

**1)** In $\Delta$ ABC, D is midpoint of $\overline{BC}$, AD = $\frac{1}{2}$ BC, then m ( $\angle$ A) = .......

**2)** The bisector of vertex of isosceles triangle bisects ................. and perpendicular to it.

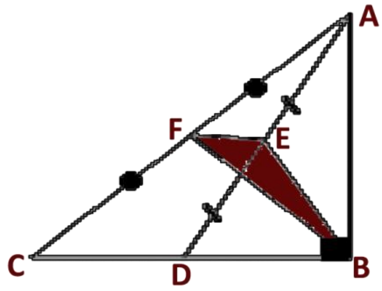
**3)** In $\Delta$ ABC, AB + BC > ....................

**4)** If the vertically opposite angles are complementary, then the measure of each one = .............$^o$

**5)** The axis of symmetry of a line segment is straight line ..............

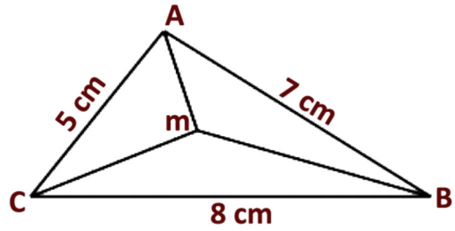
## Q3 A) In the opposite figure:

M (∠ ABC) = 90°, E midpoint of $\overline{AD}$
F midpoint of $\overline{AC}$, AD = 10 cm, DC = 6 cm
AC = 12 cm. **find the perimeter of Δ BEF**



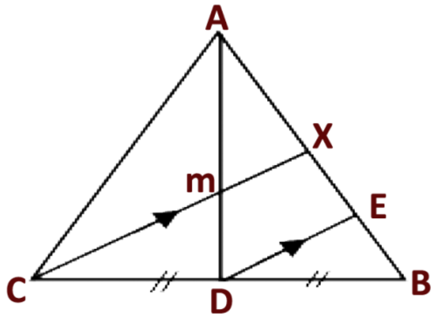

### B) In the opposite figure:

Prove that:
MB + MA + MC > 10 cm



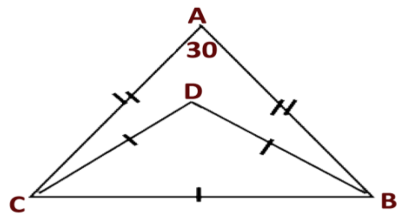

## Q4 A) In the opposite figure:

D is midpoint of BC, $\overline{AD} \cap \overline{CX}$ = { m }
AM : MD = 2 : 1, $\overline{DE}$ // $\overline{XC}$
If XM = 6 cm
**Find the length of $\overline{DE}$?**



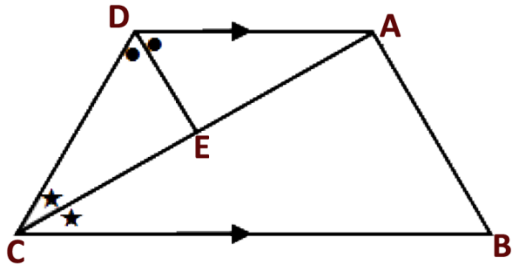

### B) In the opposite figure:

BD = DC = CB , AB = AC
M ( ∠ BAC) = 30°, **Find the m ( ∠ ABD)?**



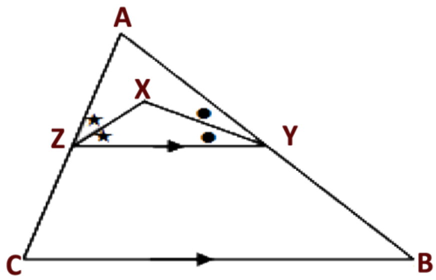

## Q5 A) In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, $\overrightarrow{DE}$ bisects (∠ADC),
$\overrightarrow{CA}$ bisects (∠BCD), **Prove that**:
① E midpoint of $\overline{AC}$ ② $\overline{DE} \perp \overline{AC}$




### B) In the opposite figure:

AB > AC, $\overline{YZ}$ // $\overline{BC}$, $\overline{XY}$ bisects ∠ (AYZ)
$\overline{XZ}$ bisects ( ∠AZY).
**Prove that: XY > XZ**




*End of the questions*

# Geometry – Model No 3

## Q1 *Choose the correct answer:*

**(1)** $\overline{AD}$ is a median in Δ ABC, AD = $\frac{1}{2}$ BC, then ∠ A is ................

a) Acute b) Obtuse c) Right d) Straight

**(2)** The measure of exterior angle of an equilateral triangle = ......°

a) 60 b) 90 c) 120 d) 180

**(3)** If the length of any side of triangle = $\frac{1}{3}$ its perimeter, then the number of axes of symmetry of this triangle is ..............

a) Zero b) 1 c) 2 d) 3

**(4)** In Δ ABC, AB + BC – CA > ........

a) Zero b) 1 c) 2 d) 3

**(5)** ABCD is a rhombus, AC > BD, then m ( ∠ D ) .......... m ( ∠ C)

a) > b) = c) < d) ≤

## Q2 *Complete each of the following:*

1) If **5 , 7 , X** are lengths of triangle sides, then X ∈ ] ........ , ........ [

2) Any point lies on axis of symmetry of a line segment is ............ From its terminals.

3) If the measures of two angles are different then the greatest in measure is opposite to a side of .........................

4) The bisector of the vertex angle of an isosceles triangle..............

5) In Δ ABC, AB = AC, m ( ∠ A) = 3 m ( ∠ B), then m(∠C) = ..........°

6) In Δ ABC if $\overline{AB} \perp \overline{BC}$ and AB = BC then m (∠ A) = ...........°

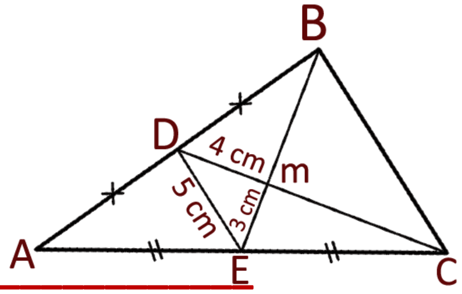
## Q3

**A) In the opposite figure:**

M is intersection point of medians

ME = 3 cm, MD = 4 cm, DE = 5 cm.

Find the perimeter of Δ MBC

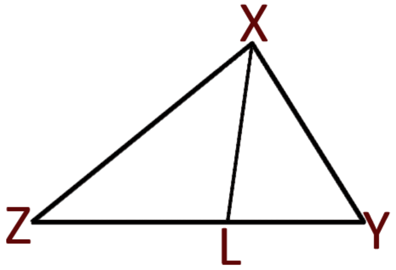



**B) In the opposite figure:**

**In Δ XYZ, L ∈ YZ**

**Prove that:**

Perimeter of Δ XYZ > 2 X L



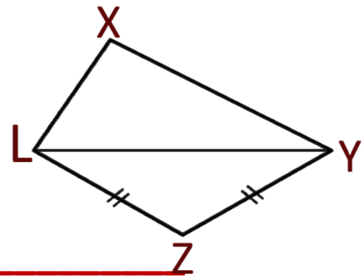

## Q4

**A) In the opposite figure:**

XY > XL, ZY = ZL

**Prove that:**

m (∠XLZ) > m (∠XYZ)

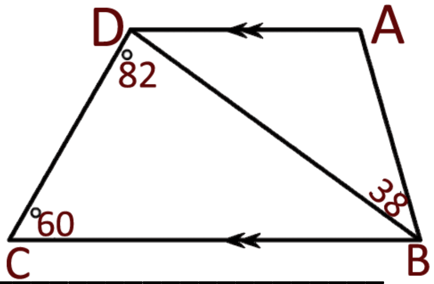



**B) In the opposite figure:**

AD // BC, m (∠BCD) = 82°, m(∠ABD) =38°

M(∠BCD) =60°. **Prove that:**

Δ ABD is an isosceles triangle



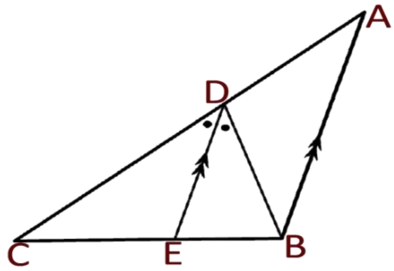

## Q5

**A) In the opposite figure:**

If $\overline{DE}$ // $\overline{AB}$

$\overrightarrow{DE}$ Bisects ∠ BDC

**Prove that:** AC > BC

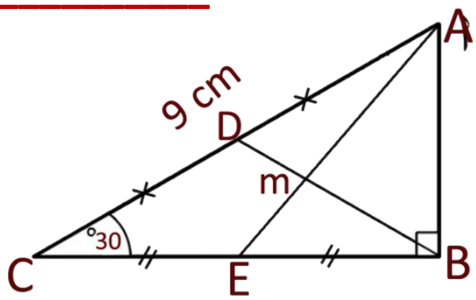



**B) In the opposite figure:**

Δ ABC is right at B, m(∠C) = 30°,

D is midpoint of $\overline{AC}$, E is midpoint of $\overline{BC}$

AC = 9 cm. Find length of $\overline{BM}$ , $\overline{AB}$




*End of the questions*

# Geometry – Model No 4

## Q1 Choose the correct answer:

**(1)** $\overline{AD}$ is a median in $\Delta$ ABC , AD = $\frac{1}{2}$ BC , then ($\angle$A) is ....................

a) Acute b) Right c) Reflex d) obtuse

**(2)** If D $\in$ axis of symmetry of $\overline{AB}$, then AD ....... BD

a) $\perp$ b) = c) > d) <

**(3)** The triangle with sides 2 cm , (X+3) cm , 5 cm is isosceles triangle when x =....................

a) – 1 b) 2 c) 3 d) 4

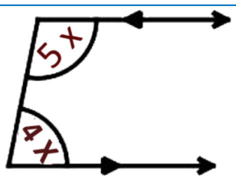
**(4)** The sum of measures of exterior angles for equilateral triangle =

a) $60^\circ$ b) $120^\circ$ c) $180^\circ$ d) $360^\circ$

**(5)** The intersecting point of the median of triangle divide it with ratio **2** : ........... from the base .

a) 1 b) 2 c) 3 d) 4

**(6)** In the opposite figure:
X =........... $^\circ$




a) 20 b) 40 c) 90 d) 180

## Q2 Complete each of the following:

1) If 3 , 4 , x + 2 are sides lengths of a triangle , then X $\in$ ] .... , .... [

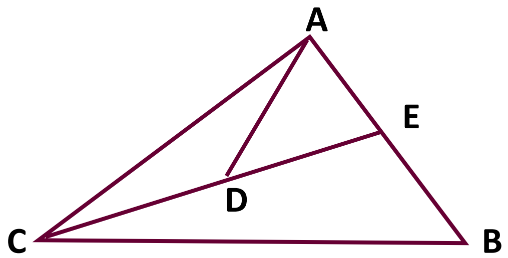
2) $\Delta$ ABC , AB = AC , m($\angle$A) = $60^\circ$ and its perimeter = 12 cm , then BC = ....................

3) In $\Delta$ ABC , m($\angle$B) =$90^\circ$ , m($\angle$A) = $30^\circ$ , then AC = ......... BC

4) The bisector of the vertex angle in isosceles triangle bisect the base and ..........................

5) In $\Delta$ ABC , AB = BC , m($\angle$B) = $50^\circ$, then m($\angle$A) > ............

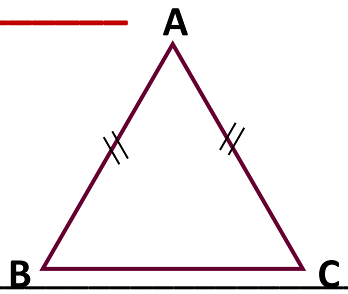
## Q3 A) In the opposite figure:




AD = CD = ED

**Prove that :** BC > AC

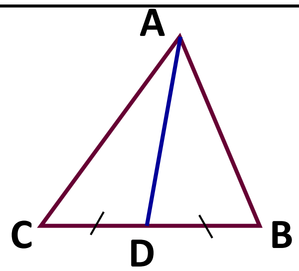
**B) In the opposite figure:**




AB = AC , m(∠A) = x , m(∠B) = 2 x

**Find** m(∠C) in degree.

## Q4 A) In the opposite figure:




Δ ABC , D is a midpoint of $\overline{BC}$

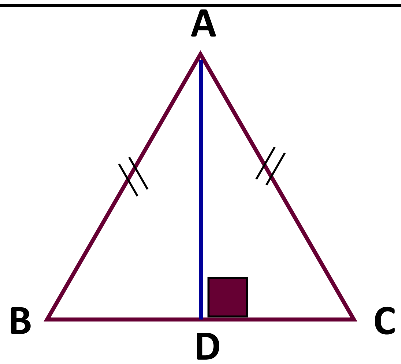
**Prove that:**

Perimeter of Δ ADC > Perimeter of Δ ABD

**B)** Δ ABC , m(∠A) = 75° , m(∠B) = 40° .

Arrange descending the sides' length of triangle ABC.

## Q5 A) In the opposite figure:



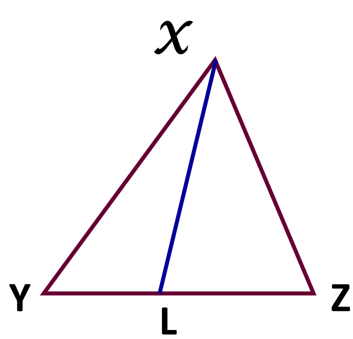

AB = AC , $\overline{AD} \perp \overline{BC}$ , AB = 13 cm

BC = 10 cm ,

**Find**: ① Length of $\overline{BD}$

② Area of Δ ABC

**B) In the opposite figure:**




**Prove that:**

Perimeter of Δ XYZ > 2 XL

*End of the questions*

# GEOMETRY – MODEL NO 5

## Q1 Choose the correct answer:

**(1)** The number of axes of symmetry of isosceles triangle = .............

a) Zero b) 1 c) 2 d) 3

**(2)** XA = XB and YA = YB, then $\overleftrightarrow{XY}$ ........... $\overline{AB}$

a) // b) $\perp$ c) $\equiv$ d) =

**(3)** In $\Delta$ ABC, m ($\angle$ C ) = 65°, m ( $\angle$ A ) = 75° then ..

a) AB > BC b) AB < AC c) BC > AB d) AB = AC

**(4)** If M is the point of intersection of medians of $\Delta$ ABC, D is midpoint of $\overline{BC}$, then AD = ............

a) 2 AM b) 4 MD c) $\frac{2}{3}$ MD d) $\frac{1}{2}$ AM

**(5)** The set of numbers can be lengths of sides of triangle are .........

a) {4, 6, 10} b) {4, 6, 8} c) {2, 6, 3} d) {4, 5, 10}

**(6)** In $\Delta$ ABC, m ( $\angle$ A ) + m ( $\angle$ B ) < m ( $\angle$ C ), then AB .... BC

a) < b) = c) > d) $\leq$

## Q2 Complete each of the following:

1) In the isosceles triangle, if AB = AC, m($\angle$A) = **70°** , then AB < .....

2) In $\Delta$ ABC, if m ($\angle$A) = **30°** and m($\angle$B) = **90°**, then BC = ..... AC

3) If the measure of two angles in a triangle are different, then the greater in measure of them is opposite to ................

4) If the measure of the vertex angle of an isosceles triangle is **80°**, then the measure of each of two base angle equal ........

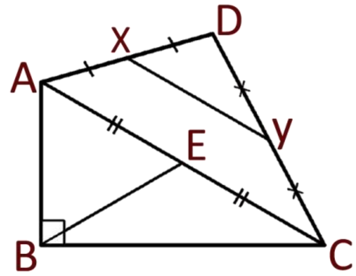
5) The measure of the exterior angle of the equilateral $\Delta$ = ..........

**Q3** **A) In the opposite figure:**

X is midpoint of $\overline{AD}$, Y is midpoint of $\overline{CD}$

E is midpoint of $\overline{AC}$, m ( ∠ ABC) = 90°

XY = 6 cm. Find length of $\overline{BE}$




**B)** Δ ABC, D ∈ $\overline{BC}$, AD = AC

**Prove that:** AB > AD

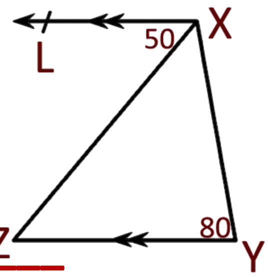
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**Q4** **A) In the opposite figure:**

XL // YZ, m ( ∠ Y) = 80°

M ( ∠ L X Z) = 50°.

Prove that: XY = Y Z



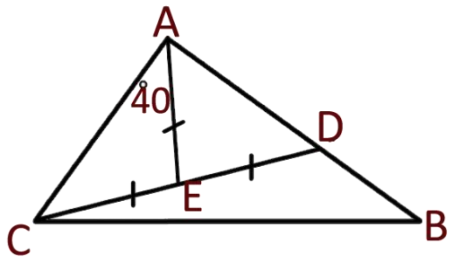

**B) In the opposite figure:**

DE = EC = AE

M( ∠ EAC) = 40°

Prove that:

① AC > AE    ② AC < BC



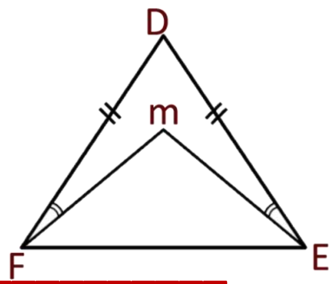

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**Q5** **A) In the opposite figure:**

If DE = DF, m ∠ DEM) = m ( ∠ DFM)

Prove that:

$\overrightarrow{DM}$ is axis of symmetry of $\overline{EF}$




**B)** ABCD is a parallelogram, its diagonal intersect at M, draw $\overrightarrow{BX}$ median in Δ ABD cut $\overline{AD}$ in X, $\overline{AC}$ in N

**Prove that:** AN = $\frac{1}{3}$ AC

End of the questions

# Geometry – Model No 6

## Q1 Choose the correct answer:

(1) The number of axes of symmetry of equilateral triangle = .........

a) 3 b) 2 c) 1 d) Zero

(2) The set of numbers which can be lengths of sides of triangle are

a) {5, 3, 8} b) {4, 6, 12} c) {2, 6, 3} d) {3, 5, 5}

(3) In $\Delta$ ABC, m ($\angle$ C ) = 65$^\circ$ , m ( $\angle$ A ) = 75$^\circ$ then ....

a) AB > BC b) AB < AC c) BC > AB d) AB = AC

(4) If XA = XB and YA = YB, then $\overleftrightarrow{XY}$ ........... $\overline{AB}$

a) // b) $\perp$ c) $\equiv$ d) =

(5) In $\Delta$ ABC, if m($\angle$B) = 90$^\circ$ , D is midpoint of $\overline{AC}$, then AC=........

a) 2 BD b) 4 BD c) $\frac{1}{2}$ BD d) $\frac{1}{3}$ AD

(6) The measures of exterior angle of equilateral triangle = .......$^\circ$

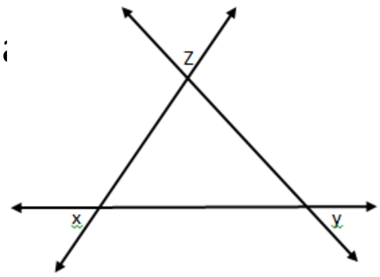
a) 60 b) 120 c) 180 d) 360

## Q2 Complete each of the following:

1) The longest side in the right angled triangle is ...........

2) The point of intersection of the medians of the triangle divides each median in the ratio 4 : ........ from the b

3) In opposite figure X+Y+Z= .................. $^\circ$




4) $\Delta$ ABC is an isosceles triangle, m ($\angle$B) = **100$^\circ$** then m ($\angle$B)=...... $^\circ$

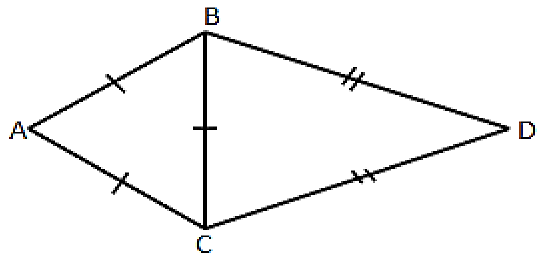
5) In $\Delta$ ABC if AB= 3 cm , BC= 4 cm , AC= X cm then X $\in$ ]...... , .... . [

## Q3 [A] In the opposite figure

AB = AC = BC , BD = DC

, m ($\angle$ABD) = 130°,

**Find** m ($\angle$D)

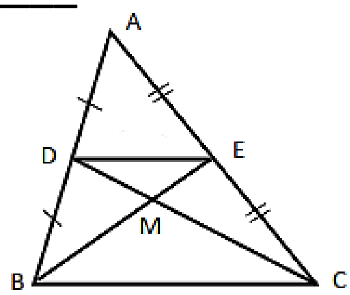



## [B] In the opposite figure

D is midpoint of $\overline{AB}$ , E is midpoint of $\overline{AC}$

BM = 4 cm , MC = 6 cm , BC = 8 cm

**Find the perimeter** of $\Delta$ DME



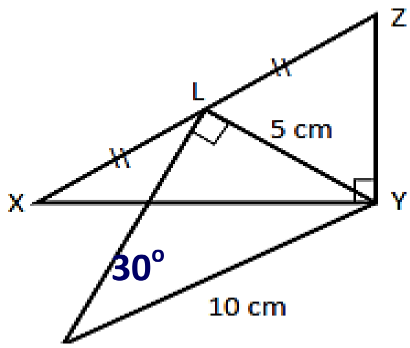

## Q4 [A] In the opposite figure

m ($\angle$XYZ) = m ($\angle$HLY) = 90°

, m($\angle$H) = 30° , LY = 5 cm, HY = 10 cm

L is midpoint of $\overline{XZ}$

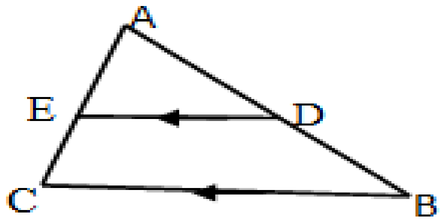
**Find the length of** $\overline{XZ}$




## [B] In the opposite figure

AB > AC , $\overline{ED}$ // $\overline{BC}$

**Prove that:** AD > AE

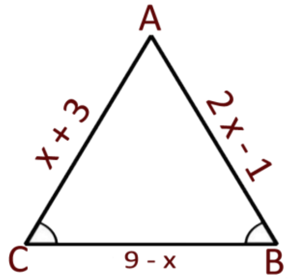



## Q5 [A] In the opposite figure

In $\Delta$ ABC, m($\angle$B) = m ($\angle$C)

AB = 2 X – 1 , AC = X + 3, BC = 9 – X

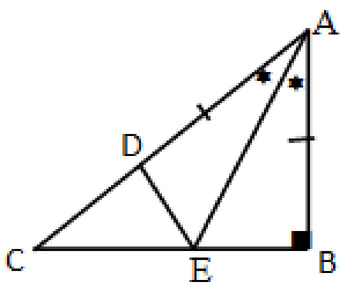
Find the numerical value of perimeter of $\Delta$ ABC




## [B] In the opposite figure

AB = AD, $\overline{AE}$ bisects $\angle$ BAC

, m($\angle$ABC) =90° , **Prove that** CE > EB




*End of the questions*

# Geometry – Model No 7

## Q1 Choose the correct answer:

**(1)** If $\Delta$ ABC is right angled triangle at B, AC = 10 cm, BC = 8 cm, then the length of the median drawn from B = ................ cm

a) 5 b) 6 c) 8 d) 10

**(2)** The point of intersection of the medians of triangle divides each of them with the ratio of ...........................from the base

a) 1 : 2 b) 2 : 1 c) 1 : 3 d) 3 : 1

**(3)** ABCD is a rhombus in which AC > BD, then m($\angle$D) .... m($\angle$C)

a) > b) < c) = d) $\leq$

**(4)** If the length of two sides of an isosceles triangle are 3 , 7 cm. then the length of the third side = ........................... cm

a) 3 b) 4 c) 7 d) 10

**(5)** In $\Delta$ ABC, m ($\angle$B) = 70 °, m ($\angle$C) = 50 °, then BC ..........AC

a) > b) = c) < d) $\leq$

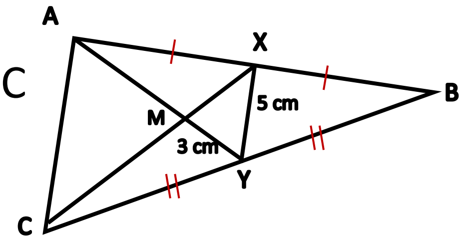
**(6)** $\overline{AD}$ is median in $\Delta$ ABC, m is intersection point of its medians, AD = 6 cm, then AM = ........... cm

a) 1 b) 2 c) 3 d) 4

## Q2 Complete each of the following:

1) ABC, BC = AC, m ($\angle$A) = 2 m ( $\angle$ C), then m ( $\angle$ B) = ..........
2) An isosceles triangle with vertex angle = 60 °, its perimeter $3\sqrt{5}$ cm, then its side length .............
3) The vertex angel bisector in the isosceles triangle bisect the base and...........................
4) In a triangle, If its side lengths is 2 , 4, X + 1 then X$\in$ ] ......, ....[
5) The length of two sides in the triangle are not equal, then the greater side in length is opposite to ............................

## Q3 A) In the opposite figure:



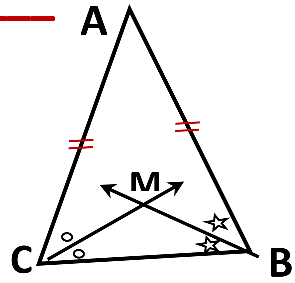

M is the intersection of the medians of $\Delta$ ABC

XY = 5 cm, CX= 12 cm, MY = 3 cm.

**Find with prove the perimeter of $\Delta$ MAC**

---

**B) In the opposite figure:**



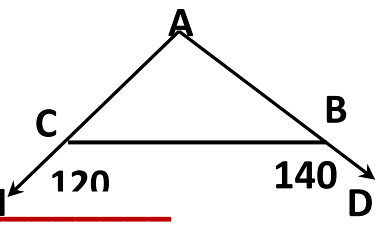

$\Delta$ ABC, AB = AC, $\overrightarrow{BM}$ bisect ($\angle$ B),

$\overrightarrow{CM}$bisect ($\angle$C), without using the congruency

**Prove that:** $\overleftrightarrow{AM}$ is the axis of symmetry of $\overline{BC}$

---

## Q4 A) In the opposite figure:

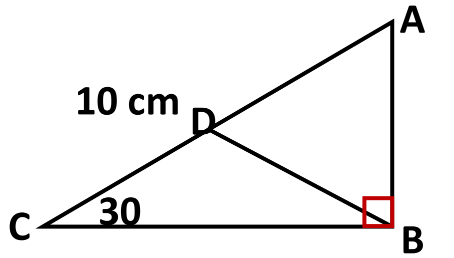



$\Delta$ ABC, D $\in\overrightarrow{AB}$, H $\in\overrightarrow{AC}$, m($\angle$CBD) = 140°

m($\angle$BCH) = 120°. **Prove that BC > AB**

---

**B) In the opposite figure:**




$\Delta$ ABC right angled triangle at B

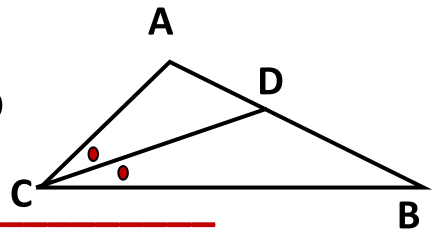
D is midpoint of $\overline{AC}$, AC = 10 cm,

m($\angle$C) = 30°.

**Calculate the perimeter of $\Delta$ ADB**

---

## Q5 A) In the opposite figure:

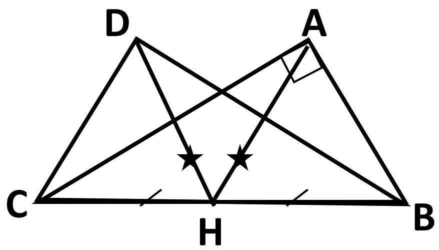



$\Delta$ ABC , $\overrightarrow{CD}$ bisect ($\angle$C) and intersect $\overline{AB}$ in D

**Prove that: BC > BD**

---

**B) In the opposite figure:**




$\Delta$ ABC right angled triangle at A

H is midpoint of $\overline{BC}$, AH = DH

**Prove that:** m($\angle$BDC) = 90°

*End of the questions*

# Geometry – Model No 8

## Q1 Choose the correct answer:

**(1)** The triangle which has three axes of symmetry is ..........

a) scalene **b)** isosceles **c)** Right angled **d)** equilateral

**(2)** If the lengths of two sides in an isosceles triangle are **8** cm and **4** cm then the length of the third side is .............. cm

a) 4 **b)** 8 **c)** 3 **d)** 12

**(3)** In $\Delta$ XYZ , m ($\angle$ Z ) = 70° , m ( $\angle$ Y ) = 60° then YZ ........XY

a) > **b)** < **c)** = **d)** Twice

**(4)** If XA = XB and YA = YB, then $\overleftrightarrow{XY}$ ........... $\overline{AB}$

a) / / **b)** $\perp$ **c)** $\equiv$ **d)** =

**(5)** If M is the point of intersection of medians of $\Delta$ ABC, D is midpoint of $\overline{BC}$, then AD =

a) 2 AM **b)** 4 MD **c)** $\frac{2}{3}$ MD **d)** $\frac{3}{2}$ AM

**(6)** The measures of exterior angle of equilateral triangle = .......°

a) **60** **b)** **120** **c)** **180** **d)** **360**

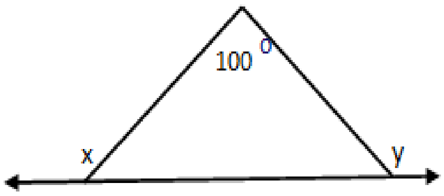
## Q2 Complete each of the following:

**1)** In $\Delta$ ABC, if AB = AC , m($\angle$A) = **70°** , then AB < ..................

**2)** In $\Delta$ ABC, if m ($\angle$A) = **30°** and m ($\angle$B) = **90°**, then BC = ......... AC

**3)** In opposite figure:

X + y =................ °




**4)** If the measure of the vertex angle of an isosceles triangle is **80°**, then the measure of each of two base angles =........

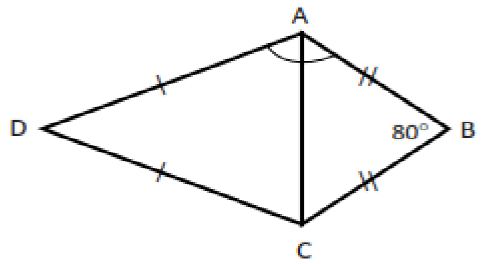
**5)** The longest side in the right angled triangle is..........

## Q3 [A] In the opposite figure

AD = DC , AB = BC

, m (∠B) = 80° , m (∠BAD) = 114°

**Find** m (∠D)

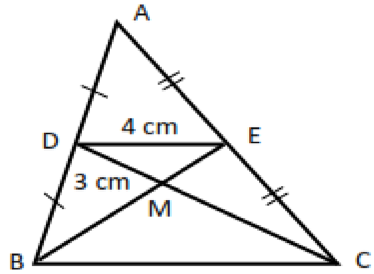



**[B] In the opposite figure**

D is midpoint of $\overline{AB}$ , E is midpoint of $\overline{AC}$

DE = 4 cm , DM = 3 cm , BE = 6 cm

**Find the perimeter** of Δ BMC




## Q4 [A] In the opposite figure

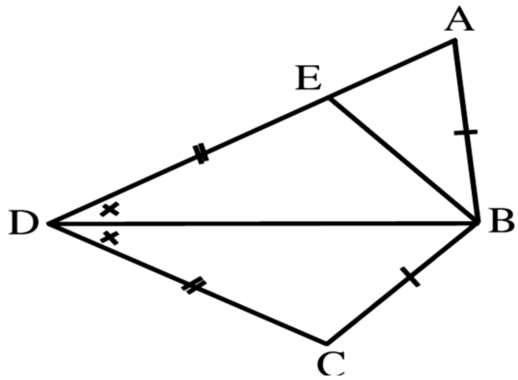
**In the opposite figure**

BA = BC and DE = DC ,

$\overline{DB}$ bisects ∠ ADC

**Prove that**:

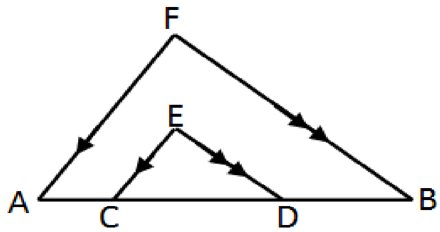
(∠A) + m(∠C) = 180°




**[B] In the opposite figure**

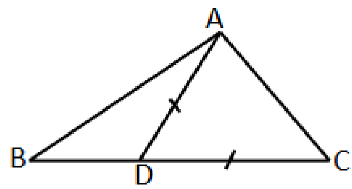
BF > FA , $\overline{ED}$ // $\overline{FB}$ , $\overline{FA}$ // $\overline{EC}$

**Prove that:** ED > EC




## Q5 [A] In the opposite figure

AD = DC Prove that BC > AB

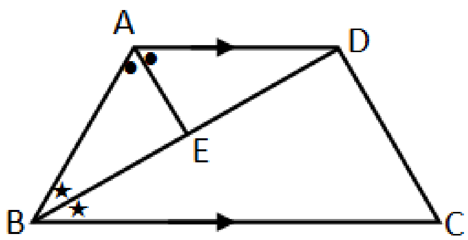



**[B] In the opposite figure**

$\overline{AD}$ // $\overline{BC}$ , $\overline{BD}$ bisects ∠ ABC

$\overline{AE}$ bisects ∠ BAD

**Prove that**: $\overline{AE} \perp \overline{BD}$




End of the questions

# Geometry – Model No 9

## Q1 *Choose the correct answer:*

**(1)** In $\Delta$ ABC , m($\angle$A) = 3 m($\angle$B) , then AC............. BC

a) = b) $\equiv$ c) > d) <

**(2)** The numbers 5 , 4 ,...... can be lengths of sides of a triangle

a) 8 b) 9 c) 10 d) 12

**(3)** If $\Delta$ ABC is right angled at **B**, then......

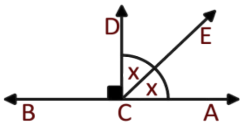
a) AC < AB b) AC > BC c) AB < AC d) BC > AC

**(4)** If A > B, C > D, then A + C .......... B + D

a) > b) = c) < d) $\leq$

**(5)** **In the opposite figure:**

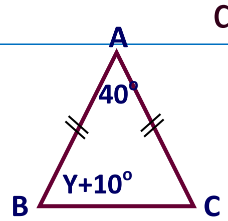
Value of X = ............°




a) 30 b) 45 c) 60 d) 90

**(6)** **In the opposite figure:**

Value of Y = ............°




a) 30 b) 40 c) 60 d) 70

## Q2 *Complete each of the following:*

1) The point of intersection of the medians of the triangle divides each of them in the ratio of .......... From the base

2) The base angles of the isosceles triangle are ...........

3) The longest side in the right angled triangle is ...............

4) In $\Delta$ ABC, m ($\angle$A) = 60°, AB = BC, then the number of axes of symmetry of $\Delta$ ABC =...

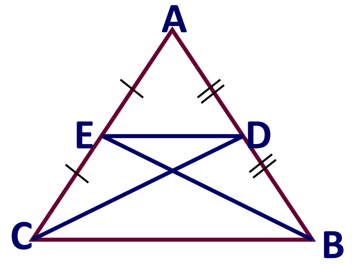
5) The measure of exterior angle of the equilateral triangle is ....... °

**Q3** **[A] In the opposite figure:**

BC = 10 cm , MB = 5 cm

MC = 6 cm

**Find** the perimeter of Δ EMD

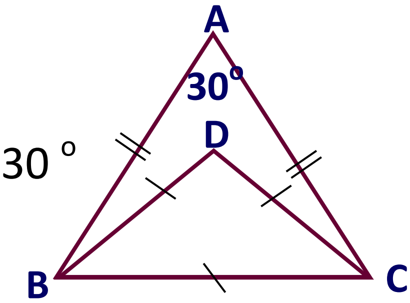



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**[B] In the opposite figure**:

AB = AC , Δ BDC is equilateral , m ( ∠ A ) = 30 °

**Find by proof:** m ( ∠ ACD )

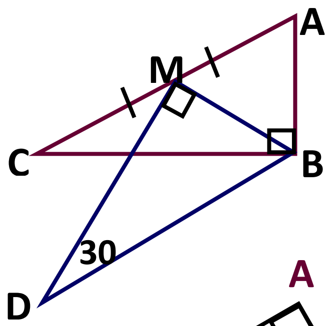



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**Q4** **[A] In the opposite figure:**

**Prove that:**

AC = BD

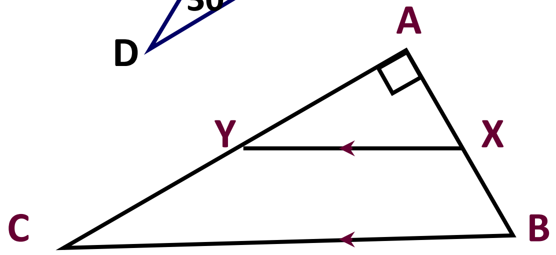



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**[B] In the opposite figure**

AC > AB , m ( ∠ A ) = 90 °

**Prove that:** m (∠AXY) **>** 45°

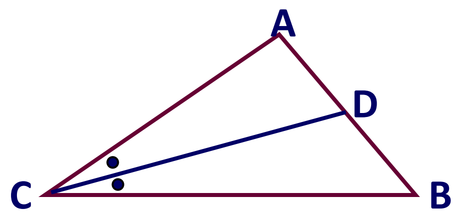



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**Q5** **[A] In the opposite figure:**

$\overline{DC}$ bisect ∠ ACB

**Prove that:** BC > BD

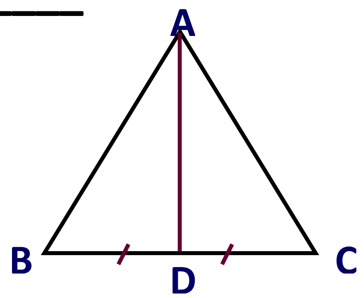



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**[B] In the opposite figure**

**Prove that:**

Perimeter of Δ ABC **>** 2 AD




*End of the questions*

# Geometry – Model No 10

## Q1 *Choose the correct answer:*

**(1)** The point of intersection of the medians of triangle divides each median in the ratio …………… from vertex.

a) 1 : 2 b) 3 : 2 c) 2 : 3 d) 4 : 2

**(2)** In $\Delta$ ABC, if m ($\angle$C) = 80°, m ($\angle$ B) = 30°. then AC ……….. BC

a) = b) < c) > d) ≤

**(3)** The axis of symmetry of a line segment is straight line ……….

a) Perpendicular to it
c) Parallel to it
b) Bisects it
d) Perpendicular at midpoint

**(4)** In any triangle, XY + YZ – XZ ………… zero

a) > b) < c) = d) ≤

**(5)** An isosceles triangle in which the lengths of two of its sides are **4** cm and **9** cm then the length of the third side equals ………..

a) 4 b) 5 c) 9 d) 13

**(6)** If AB ∩ CD = ∅, then AB , CD are ……..

a) Coincides b) Perpendicular c) Intersecting d) Parallel

## Q2 *Complete each of the following:*

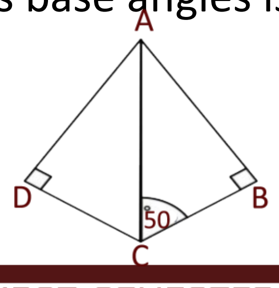
1) If measure of an angle of an isosceles is **60°**, then the triangle…..

2) The bisector of vertex in an isosceles triangle ……………. , ……….

3) In $\Delta$ XYZ, if m ($\angle$X) = 50°, m($\angle$Y) =60°, then the triangle has ……. Axes of symmetry

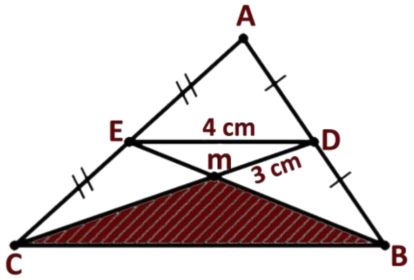
4) In isosceles triangle, if the measure of one of its base angles is 40°, then the measure of its vertex ……….°

5) **In the opposite figure:**
$\Delta$ ABC ≡ $\Delta$ ACD, m ($\angle$CAD) = ………



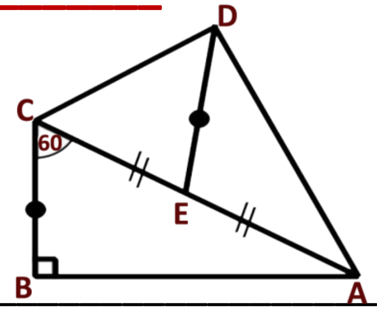
## Q3 A) In the opposite figure:

D , E are midpoints of $\overline{AB}$ , $\overline{AC}$ respectively
$\overline{BE} \cap \overline{CD}$ = {m}. if DE = 4 cm, DM = 3 cm
BE = 6cm. Find perimeter of Δ BMC



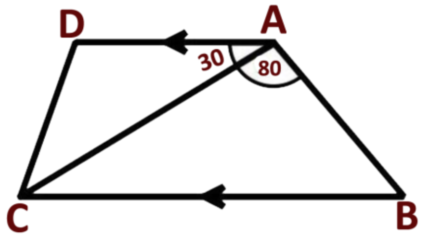

### B) In the opposite figure:

M ( ∠ B) = 90°, m (∠ACB) = 60°
$\overline{DE}$ is median in Δ DAC, BC = DE
Prove that: m ( ∠ ADC) = 90°




## Q4 A) In the opposite figure:

$\overline{AD}$ // $\overline{BC}$, m (∠BAC) = 80°,
m (∠DAC) = 30°
**Prove that:** BC > AC

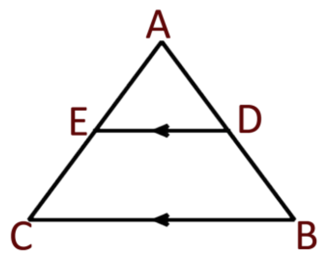



### B) In the opposite figure:

Arrange ascending the measures of Δ ABC where: AC = 12 cm, BC = 13 cm, perimeter of Δ ABC = 30 cm

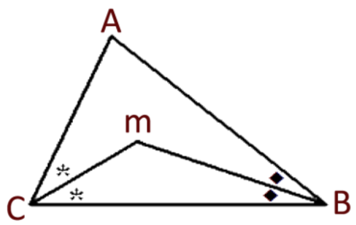
## Q5 A) In the opposite figure:

Δ ABC, $\overline{DE}$ // $\overline{BC}$, AD = AE
Prove that:
① AB = AC ② DB = EC




### B) In the opposite figure:

Δ ABC, AC > AB
$\overrightarrow{BM}$ bisects ( ∠ ABC), $\overrightarrow{CM}$ bisects (∠ACB)
Prove that: MC < MB




*End of the questions*

# Model exam

## 2- Choose the correct answer :

1) The angle whose measure 50° complements the angle whose measure ………..°

a) 40° b) 130° c) 50° d) 180°

2) The measure of the vertically opposite angle of an angle of measure 70° is ……..°

a) 20° b) 70° c) 110° d) 290°

3) A B C is an aright angled triangle at B , A B = 3 cm , B C = 4 cm then $(AC)^2 = \dots cm^2$

a) 2.5 b) 16 c) 5 d) 25

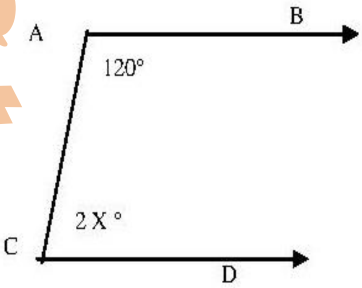
4) If $L_1 // L_2$ and $L_1 \perp L_3$ then ………………

a) $L_1 // L_3$ b) $L_2 \perp L_3$ c) $L_1 \perp L_2$ d) $L_1$ intersects $L_2$

5) $\overline{AB}$ …………….. $\overrightarrow{AB}$

a) $\in$ b) $\notin$ c) $\subset$ d) $\not\subset$

6) **In the opposite figure :**




$\overrightarrow{AB} // \overrightarrow{CD}$ then x = ……………

a) 120° b) 100° c) 60° d) 30°

---

## 2- Complete :

a) The angle whose measure is 70° supplementary the angle whose measure is …………°

b) If m ( ∠ A B C ) = 120° then m ( reflex ∠ A B C ) = …………°

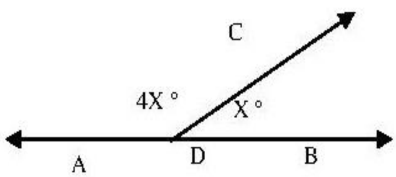
c) If Δ A B C ≡ Δ X Y Z then A C = …………..

d) If a st. line intersects one of two parallel st. lines then ……………..

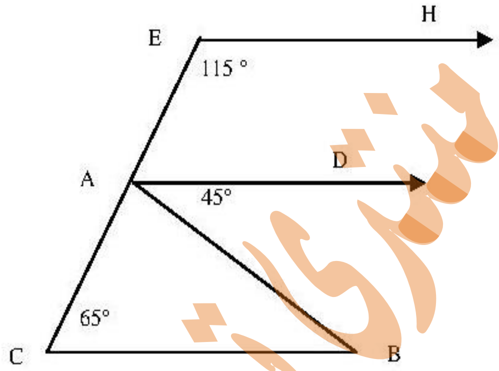
e) The sum of measure of the accumulative angles at a point equals …………°

f) In the opposite figure :

D ∈ $\overleftrightarrow{AB}$ then X = …………..°



**3- a) In the opposite figure :**



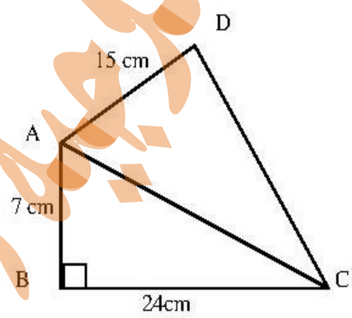

$A \in \overline{CE}$ , $\overrightarrow{EH} // \overrightarrow{AD}$ , m ( $\angle$ E ) = 115° ,

m ( $\angle$ B A D ) = 45° , m ( $\angle$ C ) = 65°

(i) is $\overrightarrow{EH} // \overline{CB}$ ? Why ?

(ii) Find : m ( $\angle$ C A B )

**b) In the opposite figure:**




m ($\angle$ B ) = 90° , m ( $\angle$ D ) = 90°

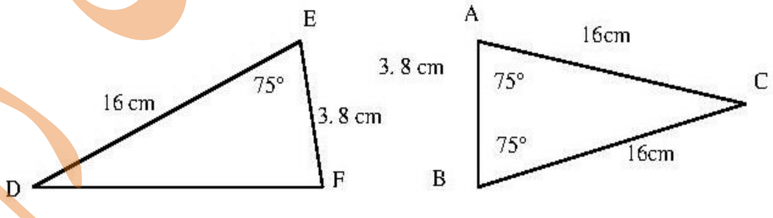
AB = 7 cm , B C = 24 cm , AD = 15 cm

Find $(\overline{CD})^2$

---

4- a) Using the geometric instruments draw $\Delta$ A B C in which A B = A C = 5 cm and B C = 6 cm draw $\overrightarrow{AD} \perp \overline{BC}$ to cut B C at D. Find the length of $\overline{AD}$ and the area of $\Delta$ A B C

**b) In the opposite figure :**

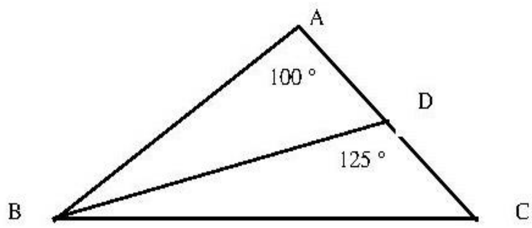



Prove that : $\Delta$ A B C $\equiv$ $\Delta$ E F D

and find : m ( $\angle$ D ) and D F

---

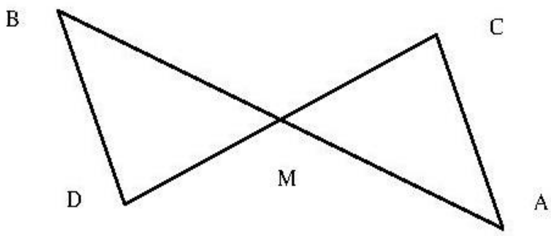
**5- a) In the opposite figure :**




m ( $\angle$ A ) = 100 , $\overline{BD}$ bisects ( $\angle$ C B A ) ,

m ( $\angle$ B D C ) = 125° find : m ( $\angle$ C )

**b) In the opposite figure :**

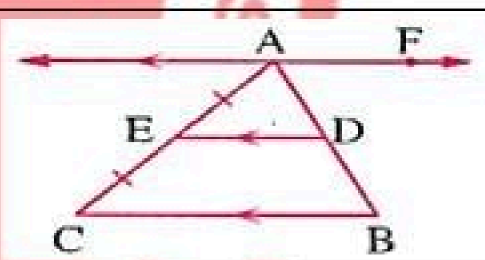
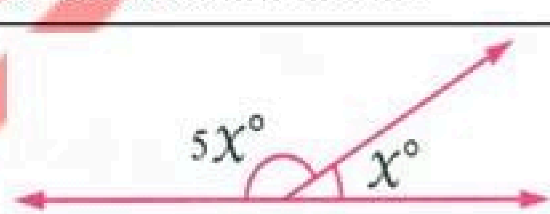



$\overline{AB} \cap \overline{CD}$ = { M } , A M = B M and

C M = D M

is $\Delta$ A M C $\equiv$ $\Delta$ B M D ? Why ?

# Exam ( 1 )

| | |
|---|---|
| 1 | *The measure of each of two equal complementary angles equals* .............. ( 180° , 45° , 360° , 90° ) |
| 2 | *If two straight lines intersect ,then each two ............ angles have the same measure* ( *vertically opposite* , *adjacent* , *alternate* , *corresponding* ) |
| 3 | *If* $\Delta ABC \equiv \Delta LMN$ *, then* $m(\angle ACB) = m(\angle$ ..........$)$ ( *LMN* , *MLN* , *LNM* , *NLM* ) |
| 4 | $\overrightarrow{AB} \cup \overrightarrow{AC} =$ ............. ( $\overrightarrow{AB}$ , $\angle ABC$ , $\angle BAC$ , $\emptyset$ ) |
| 5 | *Two adjacent angles formed by a straight line and a ray with a starting point on this straight line are* ............. ( *equal in measure* , *complementary* , *supplementary* , *adjacent* ) |
| 6 | *If straight lines cuts two parallel lines then each two corresponding angles are* ............ ( *supplementary* , *complementary* , *equal in measure* , *right* ) |
| 7 | *If two straight lines are perpendicular to a third ,then the two straight lines are* ............. ( *intersecting* , *congruent* , *parallel* , *perpendicular* ) |
| 8 | $\overleftrightarrow{AF} \parallel \overline{DE} \parallel \overline{BC}$ , AE = EC , then AD : AB = ............... ( 2 : 1 , 3 : 2 , 1 : 3 , 1 : 2 )   |
| 9 | *If the two adjacent angles are complementary ,then their outer sides* .................. |
| 10 | *If* $m(\angle A) = 125^\circ$ *, then* $m(\text{reflex} \angle A) =$ .................... |
| 11 | *Two angles are congruent if* ........................ |
| 12 | *The perpendicular bisector of a line segment is called* ................ |
| 13 | *the value of* $x =$ ........   |

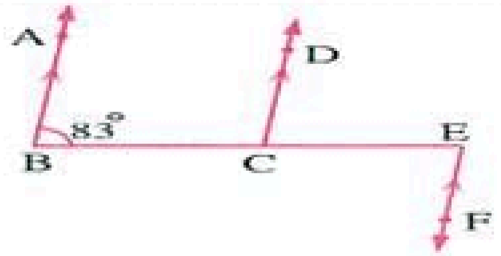
**1**

$\overrightarrow{BA}$ // $\overrightarrow{CD}$ // $\overrightarrow{EF}$

, m (∠ ABC) = 83°

**Find with giving the reason :**

m (∠ DCE) , m (∠ CEF)



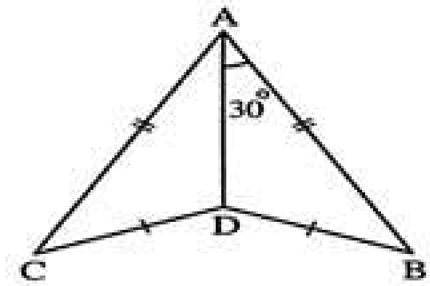

**2**

AB = AC , BD = CD

, m (∠ BAD) = 30°

(1) Does Δ ADC ≡ Δ ADB ? Why ?

(2) Find : m (∠ BAC)

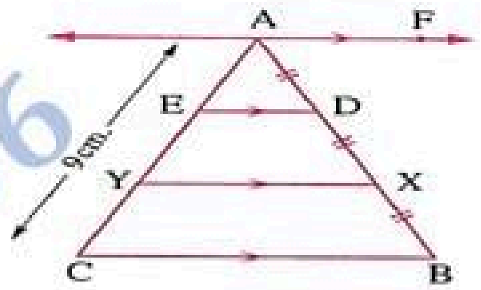



**3**

$\overleftrightarrow{AF}$ // $\overline{ED}$ // $\overline{YX}$ // $\overline{CB}$

, AD = DX = XB

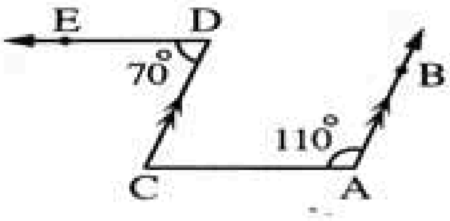
, AC = 9 cm. **Find :** The length of $\overline{AY}$

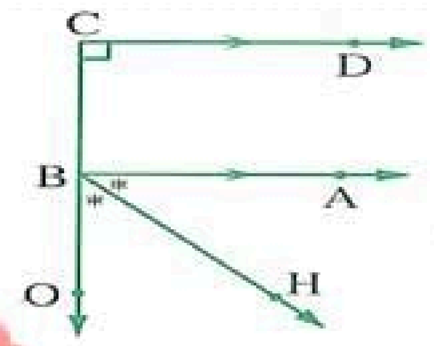



**4**

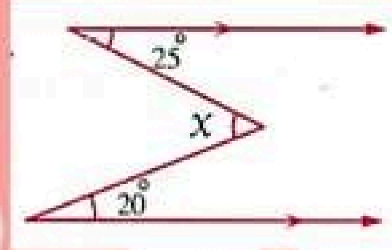
$\overrightarrow{AB}$ // $\overline{CD}$ , m (∠ D) = 70° , m (∠ A) = 110°

**Does :** $\overline{AC}$ // $\overrightarrow{DE}$ ? Why ?



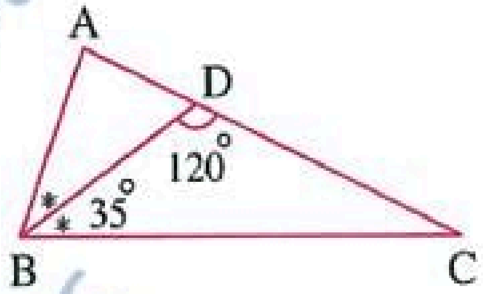
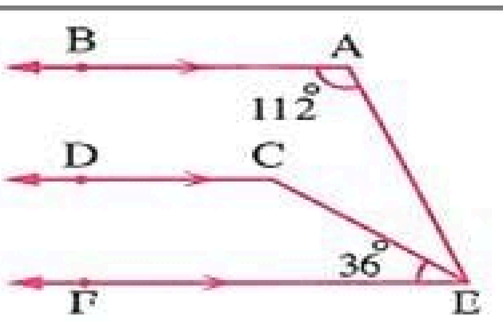
| | |
|---|---|
| 5 | $\overrightarrow{CD} \parallel \overrightarrow{BA}$ , m (∠ C) = 90° <br> , $\overrightarrow{BH}$ bisects ∠ ABO <br> **Find :** m (∠ OBH) , give reason. <br>  <br>  <br> ................................................................ <br> ................................................................ <br> ................................................................ <br> ................................................................ |
| 6 | *mention two cases of congruency of two triangles* |

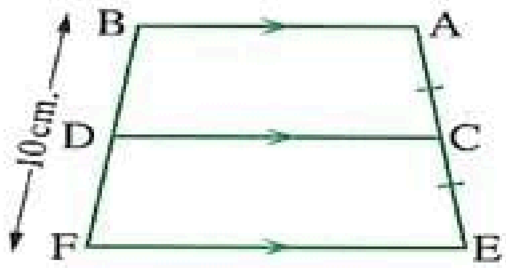
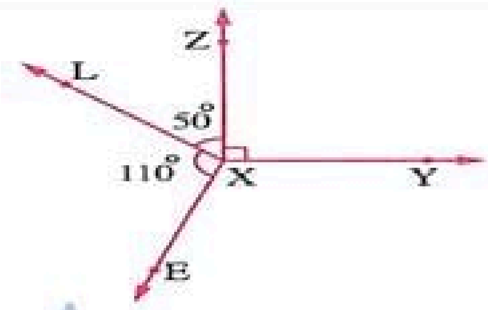
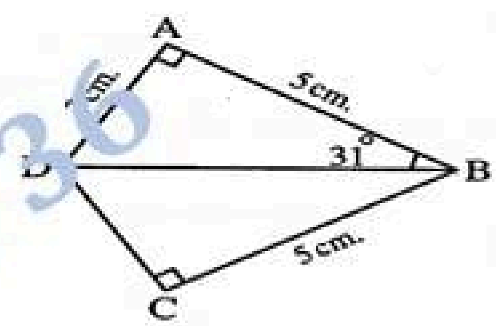
## *Exam ( 2 )*

| | |
|---|---|
| 1 | *the two angles of measures 40 ,50 are ...........* <br> ( *complementary* , *supplementary* , *reflex* , *obtuse* ) |
| 2 | *in the opposite figure* : <br> $x$ = .............. <br> (*a*) 5 (*b*) 60 (*c*) 25 (*d*) 45 <br>  <br>  |
| 3 | *If* m (∠X) = 2 m (∠Y), ∠X *and* ∠Y *are two supplementary angles* <br> *, then* m (∠Y) = ............... ( 90° , 120° , 30° , 60° ) |
| 4 | *If* $\overline{AB} \equiv \overline{CD}$ *and* AB = 4 *cm., then* AB + 2 CD = .............. *Cm.* <br> ( 10 , 4 , 8 , 12 ) |
| 5 | *If* m (∠A) = 110° *, then* m (*reflex* ∠A) = ........... <br> ( 70° , 360° , 250° , 150° ) |
| 6 | *The sum of measures of accumulative angles at point equal the sum of measures of* .................*angles* ( 360 , 4 *right* , 90 , 5 *right* ) |
| 7 | *If two triangles ABC and XYZ are congruent , then* .................. <br> ( BC = XZ , YX = CA , ZY = CB , AB = YZ ) |
| 8 | *Two complementary angles are two angles whose sum of their measures is* .............. ( 90° , 180° , 100° , 45° ) |

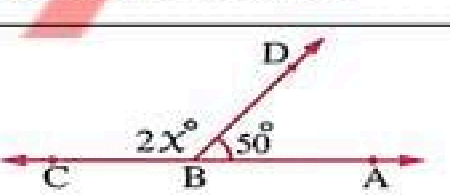
| | |
|---|---|
| 9 | *if* $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \emptyset$ *, then* $\overleftrightarrow{AB}$ *and* $\overleftrightarrow{CD}$ *are* ............. |
| 10 | *if the area of a rectangle is* $20\ cm^2$ *, its width is* $4\ cm$ *, then the perimeter of the rectangle is* ........... *cm* |
| 11 | If $L_1 \perp L_2$ and $L_2 // L_3$ , then $L_1$ ............ $L_3$ |
| 12 | *the value of* $x =$ ............   |
| 13 | $\overrightarrow{AB} \cup \overrightarrow{AC} = \angle$ .............. |

***Answer the following***

| | |
|---|---|
| 1 | $\overrightarrow{BD}$ bisects $\angle ABC$ , $m(\angle DBC) = 35°$ , $m(\angle BDC) = 120°$ **Find :** $m(\angle C)$ , $m(\angle ABC)$ and $m(\angle A)$   ........................................ ........................................ ........................................ ........................................ |
| 2 | $\overrightarrow{AB} // \overrightarrow{CD} // \overrightarrow{EF}$ , $m(\angle EAB) = 112°$ , $m(\angle CEF) = 36°$ **Find :** $m(\angle AEC)$ , $m(\angle C)$   ........................................ ........................................ ........................................ ........................................ |

| | |
|---|---|
| 3 | $\overline{AB} // \overline{CD} // \overline{EF}$<br>, AC = CE , BF = 10 cm.<br>**Find by reason :** The length of $\overline{BD}$<br><br><br>......................................................................<br>......................................................................<br>......................................................................<br>...................................................................... |
| 4 | m (∠ YXZ) = 90° , m (∠ ZXL) = 50°<br>and m (∠ LXE) = 110°<br>**Find with giving the reason :** m (∠ YXE)<br><br><br>......................................................................<br>......................................................................<br>...................................................................... |
| 5 | m (∠ A) = m (∠ C) = 90° , m (∠ ABD) = 31° ,<br>AB = CB = 5 cm. , AD = 3 cm.<br>① Is Δ ABD ≡ Δ CBD ? Why?<br>② **Find :** m (∠ ADC)<br><br><br>......................................................................<br>......................................................................<br>......................................................................<br>...................................................................... |
| 6 | ***Draw $\overline{AB}$ where AB = 5 cm , using ruler and compasses draw the axis of symmetry of $\overline{AB}$ ( Do not remove the arcs )*** |

# Exam ( 3 )

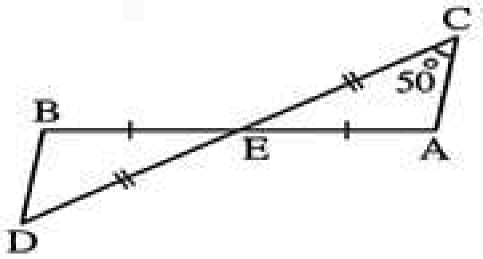
| | |
|---|---|
| 1 | $\overline{XY}$ .......... $\overleftrightarrow{XY}$ (∈ or ⊂ or ∉ or ⊄) |
| 2 | *The acute angle supplements ........... angle*<br>( *an obtuse* , *an acute* , *a reflex* ) |
| 3 | *The two straight lines parallel to a third straight line are ..................*<br>( *intersecting* , *congruent* , *parallel* , *perpendicular* ) |
| 4 | *If straight lines intersects two parallel straight lines ,then each two interior angles in the same side of the transversal are ................*<br>( *supplementary* , *complementary* , *equal in measure* , *right* ) |
| 5 | *The axis of symmetry of a line segment is .....................*<br>( *perpendicular from mid point* , *equal to it* , *parallel to it* , *congruent to it* ) |
| 6 | *The two bisector of two adjacent supplementary angles ..................*<br>( *parallel* , *perpendicular* , *coincident* , *congruent* ) |
| 7 | *If the two outer sides of two adjacent angles are on the same straight line ,then these two adjacent angles are .................* |
| 8 | *The type of the angle of measure* $179^{\circ}\ 60'$ *is .................* |
| 9 | *The two line segment are congruent if .....................* |
| 10 | *If* $\Delta ABC \equiv \Delta XYZ$ , $m(\angle A) + m(\angle B) = 115^{\circ}$ , *then* $m(\angle Z) =$ ........ |
| 11 | *If* $\angle B$ *complement* $\angle A$ *and* $\angle B \equiv \angle A$ , *then* $m(\angle B) =$ ...................... |
| 12 | *The two adjacent angles formed by intersecting of a straight line and a ray with a start point on this straight line are ......................* |
| 13 | $\overleftrightarrow{AC} \cap \overrightarrow{BD} = \{B\}$ , $m(\angle ABD) = 50$<br>$m(\angle DBC) = 2x$ , *find the value of* $x$<br><br>............................................................................................................... |

**1**

$\overline{AB} \cap \overline{CD} = \{E\}$ ,

$AE = BE$, $CE = DE$ , $m(\angle C) = 50°$

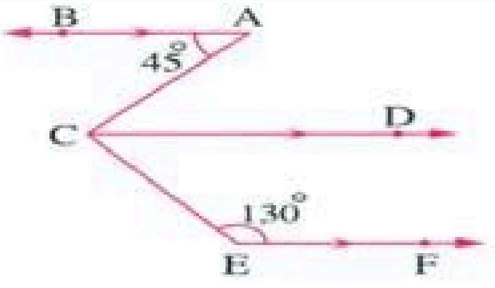
(1) Is $AC = BD$ ? Why ? (2) **Find :** $m(\angle D)$




**2**

$\overrightarrow{AB} \parallel \overrightarrow{CD} \parallel \overrightarrow{EF}$ , $m(\angle A) = 45°$ , $m(\angle E) = 130°$

Find : $m(\angle ACE)$



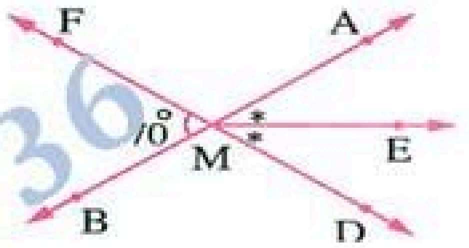

**3**

$\overleftrightarrow{AB} \cap \overleftrightarrow{DF} = \{M\}$ , $\overrightarrow{ME}$ bisects $\angle AMD$

, $m(\angle FMB) = 70°$

**Find :** (1) $m(\angle AMF)$ (2) $m(\angle AMD)$

(3) $m(\angle DME)$

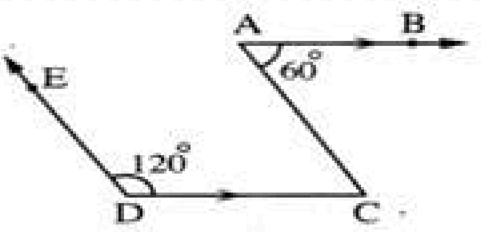


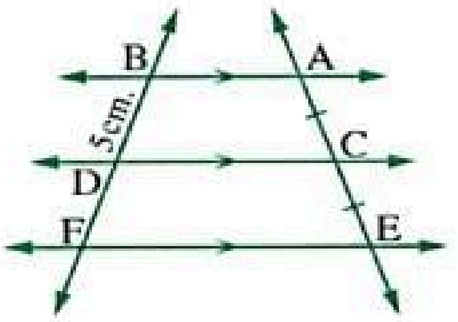

**4**

$\overrightarrow{AB} \parallel \overline{DC}$ , $m(\angle BAC) = 60°$ , $m(\angle CDE) = 120°$

(1) **Find giving reason :** $m(\angle ACD)$

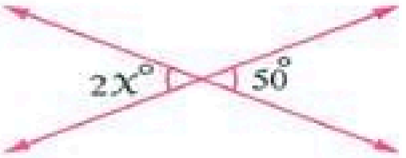
(2) Is $\overrightarrow{DE} \parallel \overline{CA}$ ? why ?



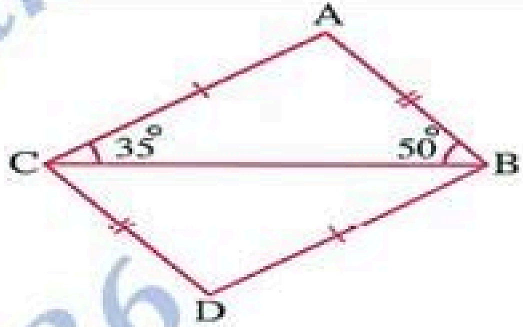
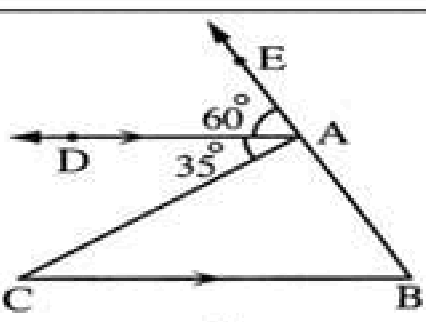
| | |
|---|---|
| 5 | $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD} \parallel \overleftrightarrow{EF}$ , AC = CE , DB = 5 cm.<br>**Find :** The length of $\overline{BF}$<br>, by giving the reason.<br><br><br>.................................................................................................<br>.................................................................................................<br>.................................................................................................<br>................................................................................................. |
| 6 | *By using your geometric instruments ,draw ∠ ABC of measure 110 , then draw $\overrightarrow{BF}$ to bisect the angle* |

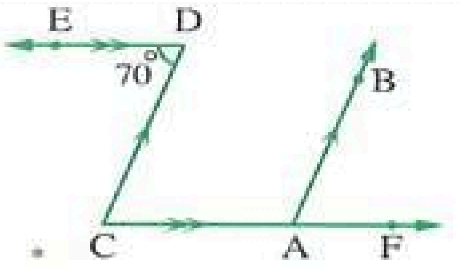
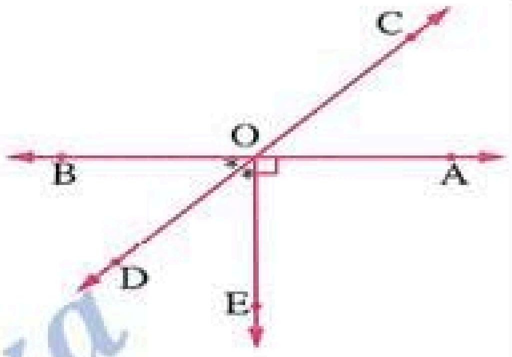
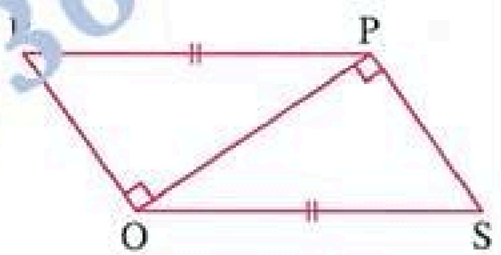
## *Exam ( 4 )*

| | |
|---|---|
| 1 | *The type of the angle of measure* $89^\circ\ 60'$ *is ................*<br>*( an obtuse , an acute , a right , a straight )* |
| 2 | *the angle of measure 70 is vertically opposite to an angle of measure ...........*<br>*( 20 , 110 , 70 , 360 )* |
| 3 | *If* $\Delta ABC \equiv \Delta XYZ$ , $m(\angle A) + m(\angle B) = 100^\circ$ , *then* $m(\angle Z) =$ ......$^\circ$<br>*( 50 , 80 , 90 , 100 )* |
| 4 | *the angle of measure x complements the angle of measure ..............*<br>$( 180 - x\ ,\ 90 - x\ ,\ 360 - x\ ,\ 90 + x )$ |
| 5 | *The measure of the supplement of the angle whose measure* $30^\circ$ = .............<br>$( 60^\circ\ ,\ 180^\circ\ ,\ 90^\circ\ ,\ 150^\circ )$ |
| 6 | *The whose measure is more than* $90^\circ$ *and less than* $180^\circ$ *is ........ angle*<br>*( an obtuse , an acute , a right , a straight )* |
| 7 | *If* $L_1$ , $L_2$ *and* $L_3$ *are straight lines ,* $L_1 \perp L_3$ , $L_2 \perp L_3$ , then $L_1$ ....... $L_2$<br>*( // , ⊥ , coincides , intersects )* |
| 8 | *If the two adjacent angles are supplementary ,then their outer sides*<br>.................. |

| | |
|---|---|
| 9 | *If* $\Delta ABC \equiv \Delta XYZ$ , $m(\angle B) = 80^\circ$ , $m(\angle Z) = 40^\circ$ , *then* $m(\angle A)$ = ………… |
| 10 | *The right angle complements ………… angle and supplements ………….. angle* |
| 11 | *If a straight lines intersects two parallel straight lines ,then every two alternate angles are …………………………* |
| 12 | *the value of* $x$ = …………..  |
| 13 | *if* $\angle X \equiv \angle Y$ , $\angle X$ , $\angle Y$ *are supplementary angles ,then* $m(\angle X)$ = …….. |

***Answer the following***

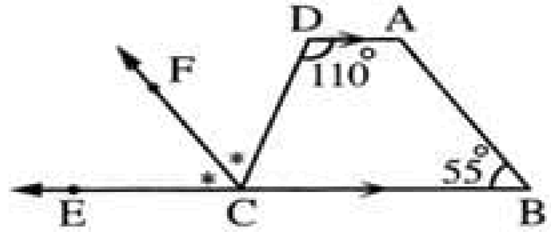
| | |
|---|---|
| 1 | AC = BD , AB = CD , m (∠ ABC) = 50° and m (∠ ACB) = 35°<br>(1) Study the congruence of Δ ABC and Δ DCB<br>(2) **Find :** m (∠ D)<br><br>……………………………………………………<br>……………………………………………………<br>……………………………………………………<br>…………………………………………………… |
| 2 | $\overrightarrow{AD} \parallel \overline{BC}$ , m (∠ DAC) = 35° , m (∠ EAD) = 60°<br>Find the measure of the interior angles of Δ ABC<br><br>……………………………………………………<br>……………………………………………………<br>……………………………………………………<br>…………………………………………………… |

| | |
|---|---|
| 3 | $\overrightarrow{AB} // \overline{CD}$ , $\overrightarrow{DE} // \overrightarrow{CA}$ and m (∠ EDC) = 70° **Find :** m (∠ DCA) and m (∠ BAF) (Give reason)   |
| 4 | $\overrightarrow{OD}$ bisects ∠ BOE , $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{O\}$ , m (∠ AOE) = 90° **Find :** m (∠ AOC)   |
| 5 | $\boldsymbol{Prove\ that}$ (1) $\triangle ROP \cong \triangle SPO$ (2) $m(\angle RPS) = m(\angle SOR)$   |
| 6 | *Draw angle of measure* $120^\circ$ *and divide it four equal angles in measure using a ruler and compasses* ( *Don't remove the arcs* ) |

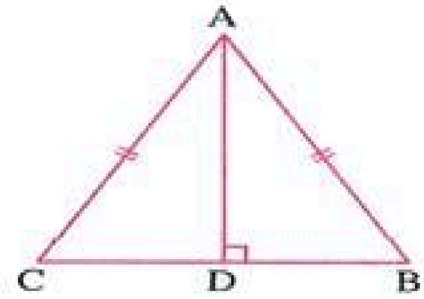
# *Exam ( 5 )*

| | |
|---|---|
| 1 | *if* $\angle A$ *complements* $\angle B$ , $\angle B$ *complements* $\angle C$ *, then* $m(\angle A)$ ......... $m(\angle C)$ ( $>$ , $<$ , $=$ , $\leq$ ) |
| 2 | *the ratio between the measures of two supplementary angles is* 4 : 5 *, then the measure of the greater angle is* ............... ( 80 , 90 , 100 , 120 ) |
| 3 | *if* $\overrightarrow{XY}$ *bisects* $\angle LXN$ , $m(LXY) = 60$ , $m(\angle LXN) =$ .......... ( 30 , 60 , 120 , 360 ) |
| 4 | *The type of the angle of measure* 179° 61\` *is* ................ ( *an obtuse* , *an acute* , *a reflex* , *a straight* ) |
| 5 | *The sum of measures of the accumulative angles at a point* = ......... ( 630° , 180° , 90° , 360° ) |
| 6 | *If* $\Delta ABC \equiv \Delta XYZ$ , $m(\angle A) = 50°$ , $m(\angle Y) = 60°$ *, then* $m(\angle C)$ = .............. ( 50° , 60° , 70° , 80° ) |
| 7 | *the triangle whose perimeter is* 12 *cm and the lengths of its two sides* 2 *cm* , 5 *cm is called* ............ ( *isosceles* , *equilateral* , *right* , *scalene* ) |
| 8 | *if* $\overline{XY} \equiv \overline{AB}$ , $XY = 5cm$ *, then* $XY + 3AB =$ ........... ( 5 , 20 , 15 , 30 ) |
| 9 | *the right angle supplements an angle of measure* ................ |
| 10 | *two triangles are congruent if each* .............. *of one triangle is equal to the corresponding part of the other triangle* |
| 11 | *if an angle of measure* 57 *comlements an angle of measure* $3x$ *, then* $x =$ .................. |
| 12 | *the square has* ........... *axes of symmetry* |
| 13 | *the value of* $x =$ ............   |

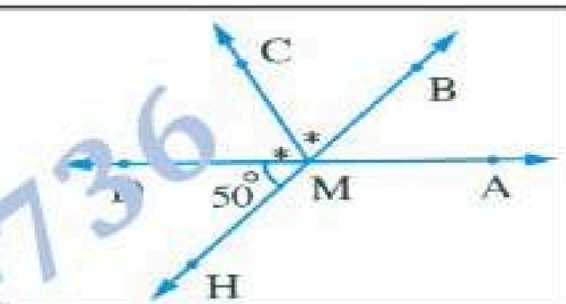
| | |
|---|---|
| 1 | $\overline{AD} \parallel \overrightarrow{BC}$ , $\overrightarrow{CF}$ bisects ∠ DCE , m (∠ B) = 55° , m (∠ D) = 110° <br> **Prove that :** $\overline{AB} \parallel \overrightarrow{CF}$ |



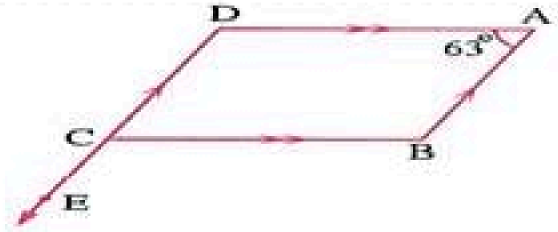

| | |
|---|---|
| 2 | ABC is an isosceles triangle <br> and $\overline{AD} \perp \overline{BC}$ <br> Why does m (∠ C) = m (∠ B) ? |

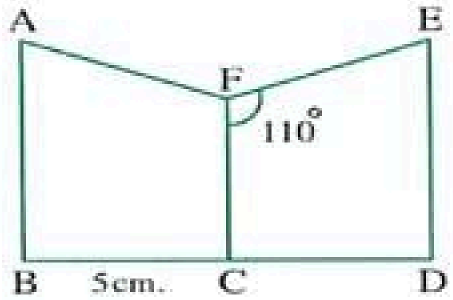



| | |
|---|---|
| 3 | $\overleftrightarrow{AD} \cap \overleftrightarrow{BH} = \{M\}$ , $m(\angle HMD) = 50$ <br> , $\overrightarrow{MC}$ *bisects* ∠ *BMD* <br> *find* : *m* (∠ *AMC*) |



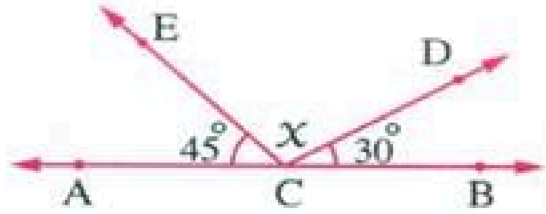

| | |
|---|---|
| 4 | $\overrightarrow{AB} \parallel \overrightarrow{DC}$ , $\overrightarrow{AD} \parallel \overrightarrow{BC}$ <br> , m (∠ BAD) = 63° <br> **Find :** m (∠ BCE) (Showing the steps) |



| | |
|---|---|
| 5 | The polygon ABCF ≡ the polygon EDCF , m (∠ EFC) = 110° , BC = 5 cm.<br>**Find :** 1 m (∠ AFC) , m (∠ AFE) , m (∠ FCB)<br>2 The length of $\overline{BD}$<br><br><br>..........................................................<br>..........................................................<br>..........................................................<br>.......................................................... |
| 6 | *using the geometric instruments , draw Δ ABC in which BC = 6 cm , AB = AC = 5 cm , then draw $\overline{AD} \perp \overline{BC}$ where $\overline{AD} \cap \overline{BC} = \{D\}$ , find the length of AD ( Don't remove the arcs )* |

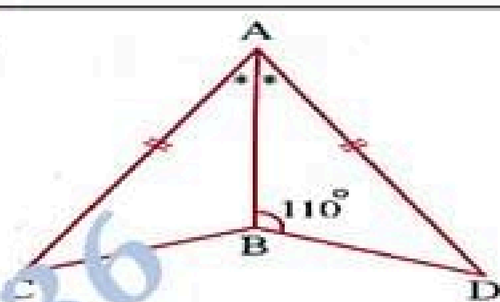
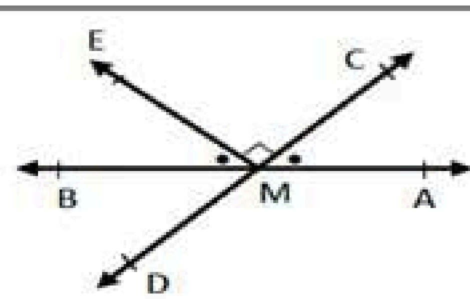
## *Exam ( 5 )*

| | |
|---|---|
| 1 | *The right angle complements angle whose measure is ..............*<br>( 0° , 45° , 90° , 180° ) |
| 2 | *If Δ ABC ≡ Δ DEF , the perimeter of Δ ABC = 18 cm , BC = 6 cm , then DE + DF = .......... cm* ( 6 , 12 , 3 , 24 ) |
| 3 | *the rectangle has ............ lines of symmetry* ( zero , 2 , 3 , 4 ) |
| 4 | *the two diagonals are perpendicular in .............*<br>( rectangle , parallelogram , rhombus , trapezium ) |
| 5 | *if $\overline{AB} \equiv \overline{CD}$ , then AB + CD = .........* ( 1 , 0 , 2 AB , CD ) |
| 6 | *m ( ∠ A ) + m( reflex ∠ A ) = ............* ( 360 , 180 , 45 , 360 ) |
| 7 | *the two vertically opposite angles are ............*<br>( corresponding , congruent , supplementary , alternate ) |
| 8 | *if the ratio between the measures of two supplementary angles is 1 : 5 , then the measure of the greater angle is ..............*<br>( 15 , 80 , 75 , 150 ) |

| | |
|---|---|
| 9 | *the value of* $x =$ ……………   |
| 10 | *two triangles are congruent if two sides and ………… of one triangle are congruent to the corresponding parts of the other triangle* |
| 11 | *if a straight line intersects two parallel straight lines ,then each two corrresponding angles are ………….* |
| 12 | *the axis of symmetry of a line segment is ………………..* |
| 13 | *the two diagonals are perpendicular in …………….. and …………………..* |

***Answer the following***

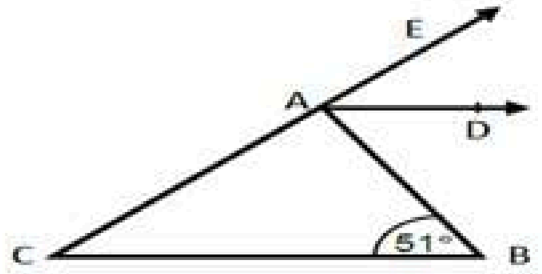


| | |
|---|---|
| 1 | AD = AC , $\overrightarrow{AB}$ bisects ∠ CAD<br>(1) Prove that : Δ ACB ≡ Δ ADB (2) If m (∠ ABD) = 110°<br>, find : m (∠ CBD)  <br>……………………………………………………………………………………<br>……………………………………………………………………………………<br>……………………………………………………………………………………<br>…………………………………………………………………………………… |
| 2 | $\overleftrightarrow{AB} \cap \overleftrightarrow{CD}$ = { M } , m (∠ CME) = 90°,<br>m (∠ AMC) = m (∠ EMB)<br>Find: m (∠ AMC) , m (∠ BMD) , m (∠ AMD)  <br>……………………………………………………………………………………<br>……………………………………………………………………………………<br>……………………………………………………………………………………<br>…………………………………………………………………………………… |

**3** $\overrightarrow{AD} \parallel \overline{CB}$ , $\overrightarrow{AD}$ bisects $\angle$ BAE

and m ($\angle$ B) = 51°

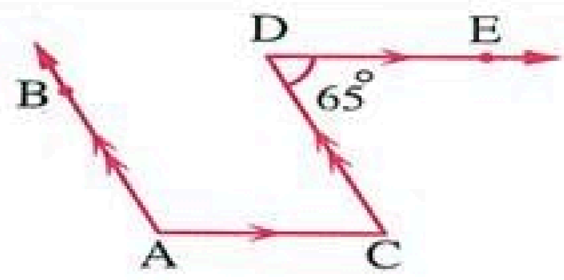
Find: m ($\angle$ BAD) , m ($\angle$ C)




**4** $\overrightarrow{AB} \parallel \overline{CD}$ , $\overrightarrow{DE} \parallel \overline{AC}$

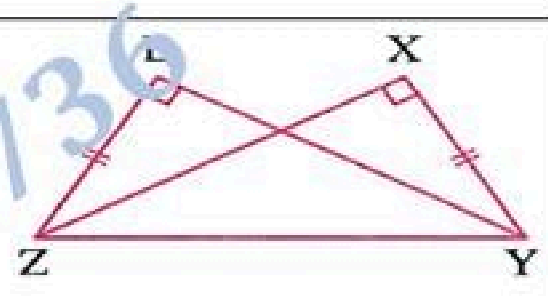
, m ($\angle$ D) = 65°

**Find :** m ($\angle$ C) , m ($\angle$ A) (Show your steps)



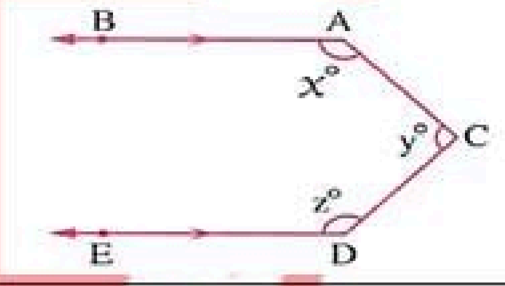
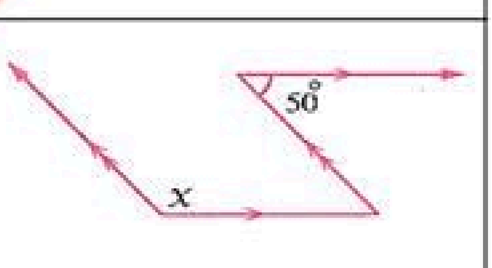

**5** m ($\angle$ X) = m ($\angle$ L) = 90° , XY = ZL

Why $\Delta$ XYZ $\equiv$ $\Delta$ LZY ? (Give reasons)



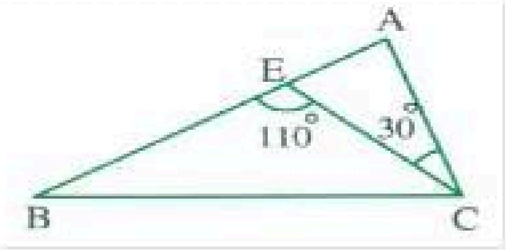

**6** *Draw $\overline{XY}$ where $\overline{XY}$ = 6 cm ,using ruler and compasses draw the axis of symmetry of $\overline{XY}$ ( Do not remove the arcs )*

## *Exam ( 7 )*

| | |
|---|---|
| 1 | *if* $\Delta ABC \equiv \Delta LMN$ *, then* $m(\angle ACB) = m(\angle \ldots\ldots)$ <br> ( *LMN* , *MLN* , *LNM* , *NLM* ) |
| 2 | *Any two line segments are congruent if they are equal in ……………* <br> ( *measure* , *capacity* , *weight* , *length* ) |
| 3 | *if* $m(\angle A) = 2\,m(\angle B)$ *,* $\angle A$ *complements* $\angle B$ *, then* $m(\angle A) = \ldots\ldots\ldots$ <br> ( 15 , 30 , 45 , 60 ) |
| 4 | *A square of side length 7 cm , then its area = ……………* $cm^2$ |
| 5 | *the two diagonals are equal in length and perpendicular in …………* <br> ( *rectangle* , *parallelogram* , *rhombus* , *square* ) |
| 6 | *if* $AB = CD$ *, then* $\overline{AB}$ ………. $\overline{CD}$ ( = , *bisects* , $\perp$ , $\equiv$ ) |
| 7 | *the measure of each of the two equal complementary angles = ……..* <br> ( 180 , 45 , 360 , 90 ) |
| 8 | *the acute angle complements ………. angle* <br> ( *an acute* , *a right* , *an obtuse* , *a straight* ) |
| 9 | *in the opposite figure :* <br> $\overrightarrow{AB} \parallel \overrightarrow{DE}$ , <br> *then* $x + y + z = \ldots\ldots\ldots$   |
| 10 | *the perpendicular to one of two coplaner parallel straight line is ………………….. to the other* |
| 11 | *A circle of radius 7 cm , then its area = ……………* $cm^2$ ($\pi = \frac{22}{7}$) |
| 12 | *Two triangles are congruent if two angles and ………………………………………* <br> ……………………………………………………………………………………… |
| 13 | *the value of* $x = \ldots\ldots\ldots$   |

**1** $m(\angle ACE) = 30$ , $m(\angle CEB) = 110$

*find* $m(\angle A)$

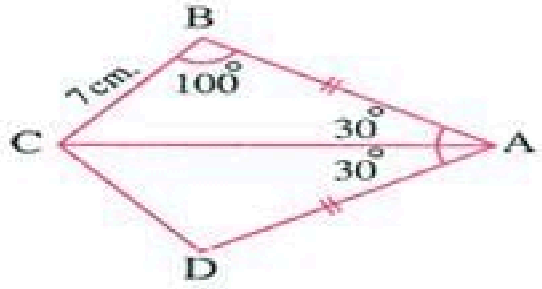



**2** AB = AD , BC = 7 cm. , m (∠ B) = 100°

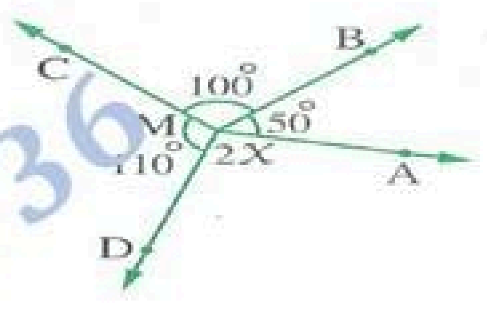
and m (∠ BAC) = m (∠ DAC) = 30°

(1) Is Δ BAC ≡ Δ DAC ? Why ?

(2) **Find :** m (∠ ACD) and the length of $\overline{CD}$

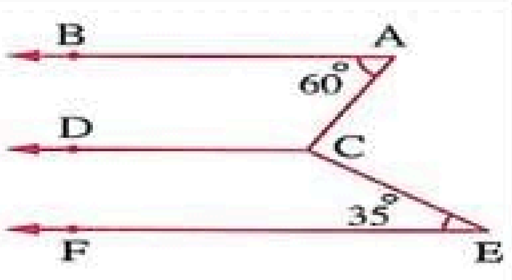


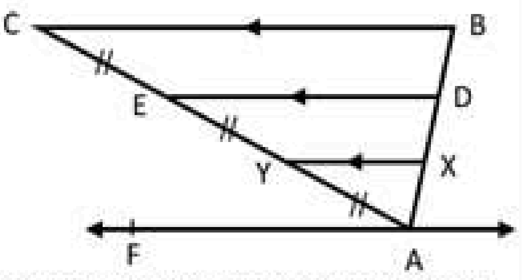

**3** *find the value of x ( give the reason )*




**4** $\overleftrightarrow{AB}$ // $\overrightarrow{CD}$ , $\overleftrightarrow{AB}$ // $\overrightarrow{EF}$ , m (∠ A) = 60°

, m (∠ E) = 35° **Find :** m (∠ ACE)



| | |
|---|---|
| 5 | $\overleftrightarrow{AF}$ // $\overleftrightarrow{XY}$ // $\overleftrightarrow{DE}$ // $\overleftrightarrow{BC}$ and AY = YE = EC , AY = 3 cm . AX = 2 cm . the perimeter of Δ ABC = 23 cm find BC   ………………………………………………………………………………………………………………… ………………………………………………………………………………………………………………… ………………………………………………………………………………………………………………… ………………………………………………………………………………………………………………… |

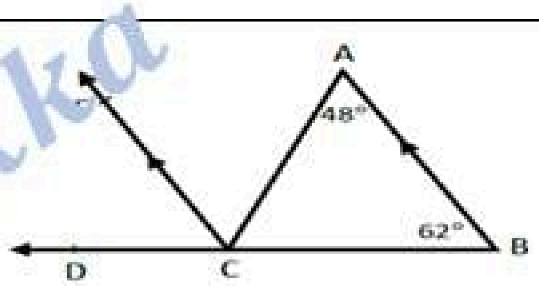
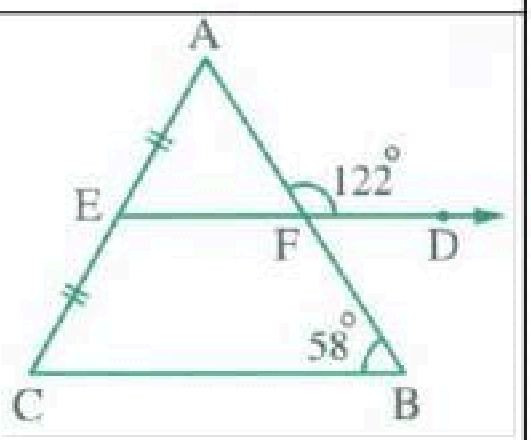
## *Exam ( 8 )*

| | |
|---|---|
| 1 | *if ∠A complements ∠B , ∠B supplements ∠C , m ( ∠A ) = 35 , then m ( ∠C ) = …………* ( 55 , 145 , 125 , 130 ) |
| 2 | *If m (∠X) + m (∠Y) = 180° , then ∠X and ∠Y are ………………* ( *equal in measure* , *complementary* , *supplementary* , *adjacent* ) |
| 3 | *the image of the point ( −3 , 5 ) translation ( 0 , −10 ) is …………* ( ( 3 , −5 ) , ( −3 , −5 ) , ( 3 , 5 ) , ( 5 , −3 ) ) |
| 4 | *the angle whose measure is 95 60\` supplements an angle of measure ………………* ( 75 , 84 , 90 , 100 ) |
| 5 | *if m ( ∠X ) = 3 m ( ∠Y ) and ∠X , ∠Y are supplementary angles , then m ( ∠X ) = …………* ( 90 , 180 , 45 , 135 ) |
| 6 | *ABCD is a rectangle , then* $\overline{BC}$ ≡ ……….. ( $\overline{AC}$ , $\overline{BD}$ , $\overline{AD}$ , $\overline{DC}$ ) |
| 7 | *if* $L_1$ , $L_2$ , $L_3$ *are straight lines in the same plane ,* $L_1 \perp L_3$ , $L_2 \perp L_3$ , *then ……………* ( $L_1 // L_2$ , $L_1 \perp L_2$ , $L_1 // L_3$ , $L_2 // L_3$ ) |
| 8 | *if the two vertically opposite angles are supplementay , then the measure of each angle is …………* ( 45 , 90 , 180 , 60 ) |

| | |
|---|---|
| 9 | *the reflex angle is the angle whose measure is more than ……… and less than …………………….* |
| 10 | *if the area of a square is* $25cm^2$ *, then its perimeter =* ………………. *cm* |
| 11 | *if a line segment is extended from both sides to infinity , then it is called* …………….. |
| 12 | *if C is the mid point of* $\overline{AB}$ *, then* $\overline{AC} \equiv$ …………… |
| 13 | *the value of* $x =$ ………..  |



## *Answer the following*

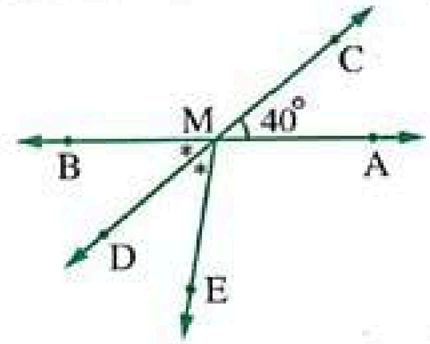
| | |
|---|---|
| 1 | $\overline{BA} \parallel \overline{CE}$ , m (∠ A) = 48°<br>D ∈ $\overrightarrow{BC}$ , m (∠ B) = 62°<br>Find: m (∠ ECD) , m (∠ ACE) ,<br>and m (∠ ACB)<br><br>……………………………………………………………………<br>……………………………………………………………………<br>……………………………………………………………………<br>…………………………………………………………………… |
| 2 | ABC is a triangle , E is the midpoint of $\overline{AC}$<br>, $\overrightarrow{EF}$ intersects $\overline{AB}$ at F , m (∠ AFD) = 122°<br>and m (∠ B) = 58°<br>Is $\overrightarrow{EF} \parallel \overline{CB}$ ? Why ?<br><br>……………………………………………………………………<br>……………………………………………………………………<br>……………………………………………………………………<br>…………………………………………………………………… |

**3**

$\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$ , m (∠ AMC) = 40°

and $\overrightarrow{MD}$ bisects ∠ BME

**Find :** m (∠ AME)



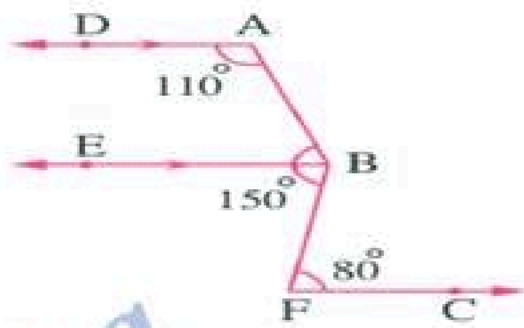

**4**

$\overrightarrow{AD}$ // $\overrightarrow{BE}$

, m (∠ F) = 80°

, m (∠ A) = 110° and m (∠ ABF) = 150°

Is $\overrightarrow{BE}$ // $\overrightarrow{FC}$ ? (Give reason)




**5**

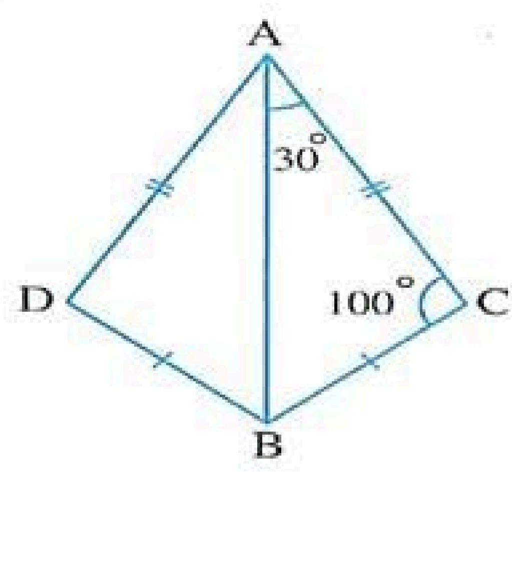
AC = AD , BC = BD

, m (∠ ACB) = 100°

, m (∠ CAB) = 30°

1 **Prove that :** Δ ABC ≡ Δ ABD

2 **Find :** m (∠ ABD)



# Exam ( 9 )

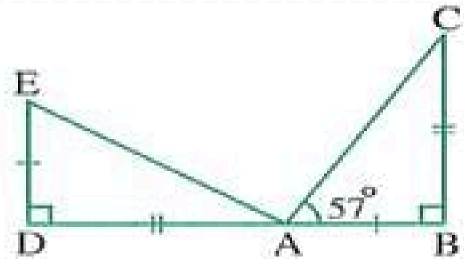
| | |
|---|---|
| 1 | *if* $\overrightarrow{BD}$ *bisects* $\angle ABC$ *, then* $m(\angle ABD)$ ......... $m(\angle DBC)$ <br> ( = , <, ≡ , > ) |
| 2 | *the obtuse angle supplements ........... angle* <br> ( *an acute* , *an obtuse* , *a zero* , *a right* ) |
| 3 | *the perimeter of a square is 24 cm , then its area is ............* $cm^2$ <br> ( 8 , 9 , 3 , 36 ) |
| 4 | *if* $\overline{BC} = \overline{XY}$ *, then* $BC \div XY =$ ............. ( 2 , *zero* , 1 , *XY* ) |
| 5 | *the perpendicular bisector of a line segment is called ............* <br> ( *symmetry axis* , *parallel* , *intersecting line* , *median* ) |
| 6 | *if* $\angle X$ *supplements* $\angle Y$ *,* $m(\angle X) = 60$ *, then* $m(\text{reflex } \angle Y) =$ ........... <br> ( 120 , 180 , 240 , 300 ) |
| 7 | *if the two vertically opposite angles are complementary , then the measure of each angle is ..........* ( 90 , 45 , 180 , 50 ) |
| 8 | *the straight line which is perpendicular to one of two parallel straight lines is ................ to the other straight lines in the plane* <br> ( *perpendicular* , *parallel* , *coincided* , *otherwise* ) |
| 9 | *the obtuse angle is the angle whose measure is more than ............ and less than ..................* |
| 10 | *the two right angled triangles are congruent if .................... , ........................ are congruent to their corresponding parts in the other triangle* |
| 11 | *the value of* $x =$ ...........  |
| 12 | *if the two lines* $L_1 , L_2$ *are two parallel lines , then* $L_1 \cap L_2 =$ ........... |

**1**

AB = DE

, BC = AD , m (∠ CAB) = 57°

Find the measures of the unknown angles in the triangle ADE

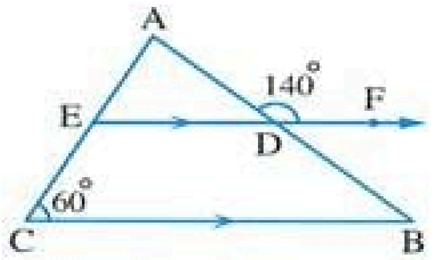



**2**

$\overline{BC}$ // $\overrightarrow{EF}$ , m (∠ C) = 60°

, m (∠ ADF) = 140°

**Find each of the following :** m (∠ B) and m (∠ A)

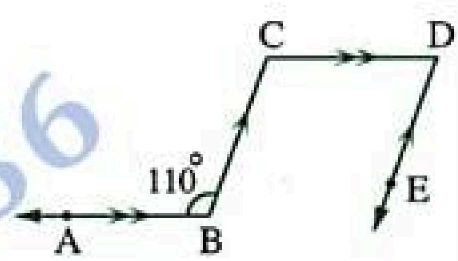



**3**

$\overrightarrow{BA}$ // $\overline{CD}$ , $\overline{CB}$ // $\overrightarrow{DE}$

, m (∠ B) = 110°

**Find :** m (∠ D)



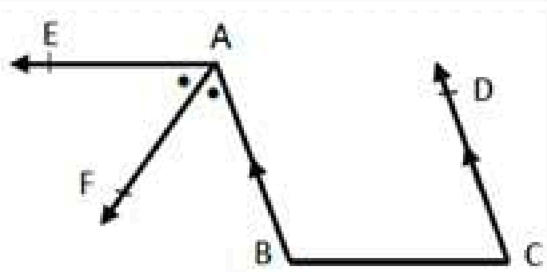

**4**

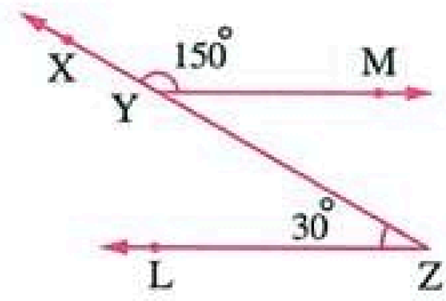
$\overrightarrow{CD}$ // $\overline{BA}$ , $\overline{CB}$ // $\overrightarrow{AE}$

$\overrightarrow{AF}$ bisects ∠ BAE, and

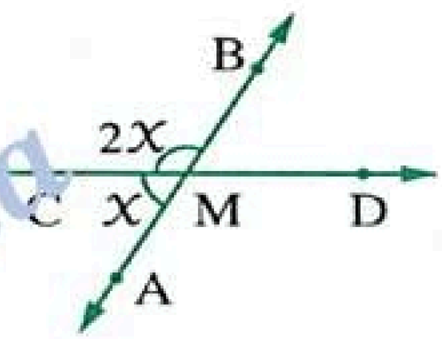
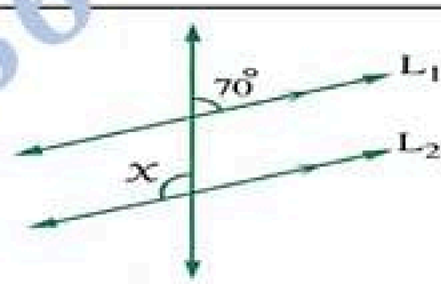
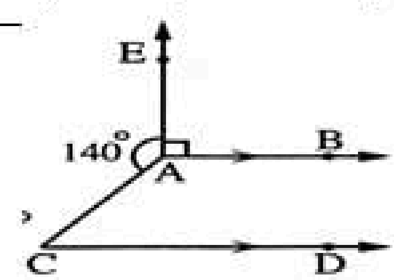
m (∠ FAE) = 58°

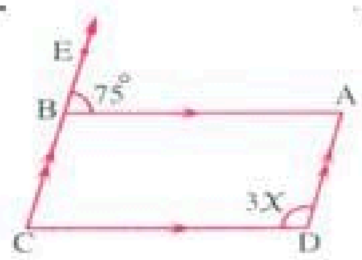
Find: m (∠ C)



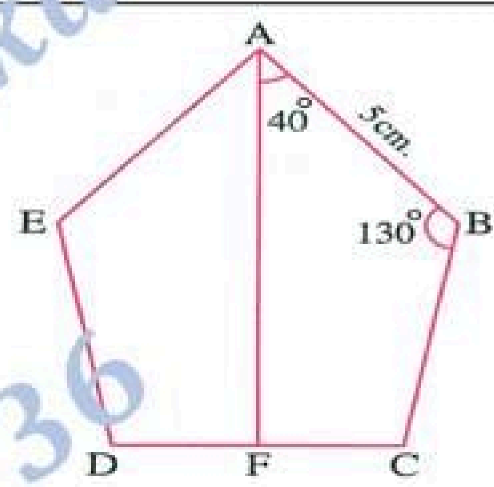
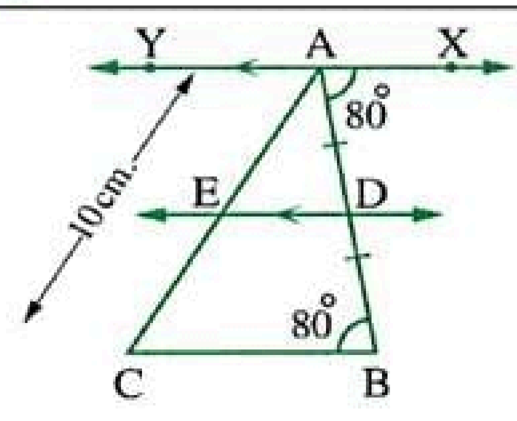
| | |
|---|---|
| 5 | If $Y \in \overrightarrow{ZX}$ , m (∠ XYM) = 150° <br> and m (∠ Z) = 30° <br> (1) **Find :** m (∠ MYZ) <br> (2) Is $\overrightarrow{YM} // \overrightarrow{ZL}$ ? Why ? (Showing the steps) <br>   <br> ........................................ <br> ........................................ <br> ........................................ <br> ........................................ |

## *Exam* ( 10 )

| | |
|---|---|
| 1 | *if* $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$ *, then* $x =$ ................. <br> (*a*) 30 (*b*) 45 (*c*) 60 (*d*) 90 <br>   |
| 2 | *if* ∠ *X* ≡ ∠ *Y and* ∠ *X* , ∠ *Y are supplementary angles , then m* ( ∠ *X* ) = ............. ( 45 , 90 , 135 , 180 ) |
| 3 | *in the opposite figure :* <br> *x* = .................... <br> (*a*) 70 (*b*) 90 (*c*) 110 (*d*) 290 <br>   |
| 4 | *the angle whose measure is more than* 180 *and less than* 360 *is called* ............ ( *obtuse* , *straight* , *reflex* , *acute* ) |
| 5 | *m* ( ∠ *C* ) = .................. <br> ( 90 , 140 , 40 , 50 ) <br>   |
| 6 | *the number of rectangles of the opposite figure is* ................ ( 3 , 4 , 6 , 5 ) <br>  |
| 7 | *if* ∠ *A* ≡ ∠ *B , then m* ( ∠ *A* ) − *m* ( ∠ *B* ) = ........... |

| | |
|---|---|
| 8 | *the obtuse angle supplements ……………. angles* |
| 9 | *if a straight line cuts two straight lines and two corresponding angles are equal in measure , then the two straight lines are …………* |
| 10 | *the value of* $x =$ …………..   |
| 11 | *the two diagonals are equal in length in …………….. and ……………..* |
| 12 | *if* $\angle X$ *supplements* $\angle Y$ *and* $m(\angle X) = \frac{1}{2}\, m(\angle Y)$, *then* $m(\angle Y) =$ …… |

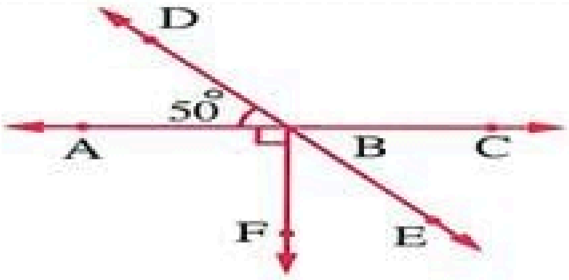
## *Answer the following*

| | |
|---|---|
| 1 | The figure ABCF ≡ the figure AEDF<br>m (∠ AFC) = 90° , AB = 5 cm.<br>**Complete :**<br>(1) m (∠ BAE) = ……………°<br>(2) AE = …………… cm.<br>(3) m (∠ EDF) = m (∠ ……………)   |
| 2 | $\overleftrightarrow{XY} \parallel \overleftrightarrow{DE}$<br>, m (∠ XAE) = 80° , m (∠ B) = 80<br>, AD = BD , AC = 10 cm.<br>Is $\overleftrightarrow{DE} \parallel \overline{BC}$ ? Why ?<br>**Find :** The length of $\overline{AE}$ , give reason  <br>……………………………………………………………………………<br>……………………………………………………………………………<br>……………………………………………………………………………<br>…………………………………………………………………………… |

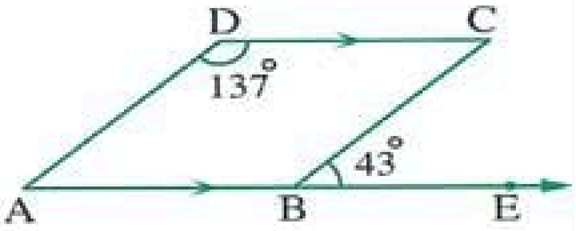
**3** $\overleftrightarrow{AC} \cap \overleftrightarrow{DE} = \{B\}$ , m (∠ ABD) = 50°
and m (∠ ABF) = 90°

**Find showing the steps :**

(1) m (∠ DBC)
(2) m (∠ CBE)
(3) m (∠ FBE)

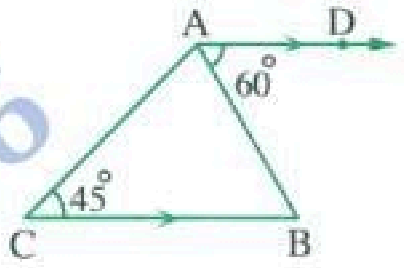



**4** $\overrightarrow{AB}$ // $\overline{DC}$ , m (∠ EBC) = 43°
, m (∠ D) = 137°
Is $\overline{BC}$ // $\overline{AD}$ ? Giving reason.

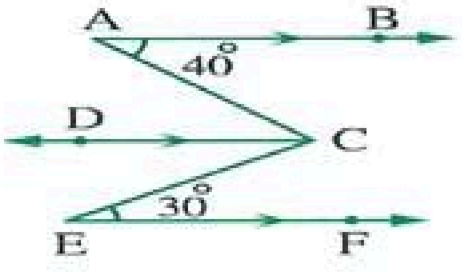



**5** $\overrightarrow{AD}$ // $\overline{CB}$ , m (∠ BAD) = 60° , m (∠ C) = 45°

Find : m (∠ BAC) , m (∠ B)




**6** $\overrightarrow{AB}$ // $\overleftrightarrow{CD}$ // $\overrightarrow{EF}$
, m (∠ A) = 40° , m (∠ E) = 30°
**Find :** m (∠ ACE)



## 1 Choose the correct answer:

1) If m ($\angle$ A) = 60°, then m (reflex $\angle$ A) = ……. .

a) 30° b) 60° c) 120° d) 300°

2) If $\triangle$ ABC ≡ $\triangle$ XYZ, if $\angle$ m A + m $\angle$ B = 130° then m $\angle$ Z = …….°.

a) 65 b) 90 c) 50 d) 60

3) If $\angle$A, $\angle$B are supplementary angles if m $\angle$A = 2m $\angle$B, then m $\angle$B = …….°.

a) 180 b) 120 c) 30 d) 60

4) The sum measures of the accumulative angles at a point is …….°.

a) 180 b) 120 c) 90 d) 360

5) If m $\angle$ A = 120°, then the reflex of $\angle$ A is …….° .

a) 200 b) 60 c) 240 d) 90

## 2 Complete:

1) Every two vertically opposite angles are ……. in measure.

2) If two adjacent angles are supplementary, then their outer sides are ……. .

3) If $\angle$ A ≡ $\angle$ B, then m $\angle$ A – m $\angle$ B = is ……. .

4) The sum of the measure of the two complementary angles is ……. °.

5) Every two corresponding angles are ……. .

## 3

**a)** Using the geometric instruments, draw $\Delta$ ABC where, AB = AC = 5 cm BC = 6 cm, then bisect $\angle$ A by the bisector $\overline{AD}$ to meet $\overline{BC}$ at D.

(don't remove arce).

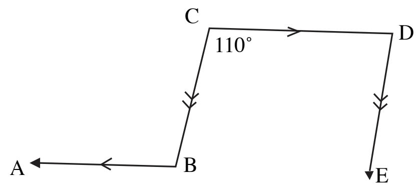
**b)** In the opposite figure if $\overline{CD} \parallel \overrightarrow{BA}$ , $\overrightarrow{DE} \parallel \overline{CB}$

m $\angle$ C = 110°

**Find:**

1. m $\angle$ D

2. m $\angle$ B



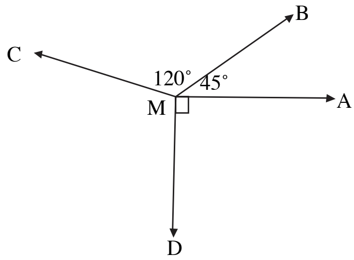
**4** **a) In the opposite figure.**

m ∠ AMB = 45°

m ∠ BMC = 120°

m ∠ AMD = 90°

**Find m ∠ CMD**

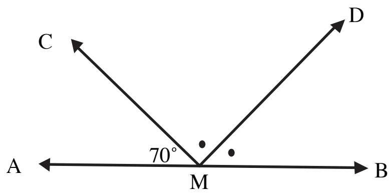



**b) In the opposite figure**

M ∈ $\overleftrightarrow{AB}$ , m ∠ AMC = 70°

$\overrightarrow{MD}$ bisects ∠ CMB

**Find m ∠ BMD by proof**

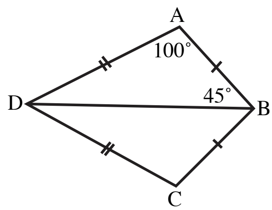



**5** **a) In the opposite figure**

AB = CB, AD = CD

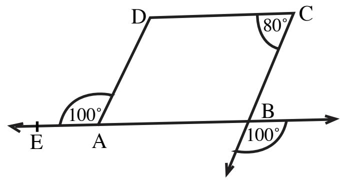
m ∠ ABD = 45°, m  A = 100°

**Find with proof m ∠ CDB**




**b) In the opposite figure**

**mension the parallel lines.**




## Cairo 2 — El-Nozha Educational Zone - El- Sayeda Khadiga Language School

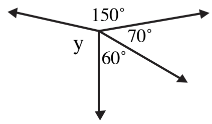
**1** **Complete:**

1. The angle of measure 25° supplements the angle of measure ……. °.
2. In any right-angled triangle the side which is opposite to the right angle is called …….°.
3. If a straight line intersects two parallel straight lines, then every two alternate angles are ……. .
4. Two triangles are congruent if the lengths of sides of one triangle ……. .
5. If △ ABC ≡ XYZ, m (∠ X) + m (∠ Y) = 150°, then m (∠ C) = ……. °.

## 2 Choose the correct answer from the given ones:

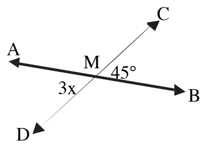
a) The angle of measure 30° complements of the angle of measure ....... .

{90° , 180° , 60° , 150°}




b) In the opposite figure: y = ....... .

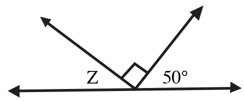
{360° , 60° , 180° , 80°}




c) In the opposite figure:

If $\overleftrightarrow{AB} \cap \overleftrightarrow{DC} = \{M\}$, x = ....... .

{45° , 15° , 135° , 165°}



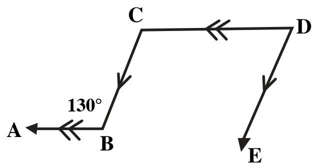

d) In the opposite figure, Z =

{40° , 50° , 90° , 60°}

e) The two lines which are parallel to a third are ....... .

{perpendicular - parallel - equal - intersect}

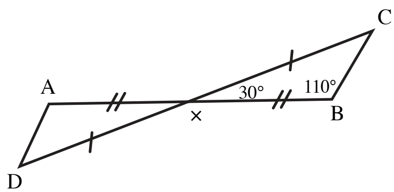
## 3 a) In the opposite figure:




$\overline{CD} \parallel \overline{BA}$ and $\overline{DE} \parallel \overline{CB}$, m (∠ B) = 130°

**Find: m (∠ D)** (Giving reasons)

**b) In the opposite figure:**




$\overline{AB} \cap \overline{CD} = \{X\}$, AC = XB

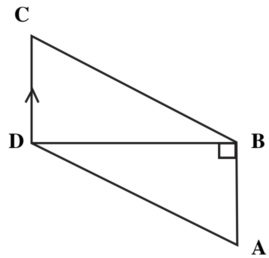
DX = XC, m (∠ CXB) = 30°

m (CBX) = 110°

**1) Find m (∠ D)** (Giving reasons)

**2) Is $\overline{AD} \parallel \overline{BC}$ ? Why?**

## 4 a) In the opposite figure:



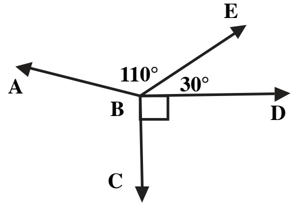

m (∠ ABD) = 90°, $\overline{BA} \parallel \overline{CD}$

**Find: m (∠ BDC)**

**b) In the opposite figure:**

m (∠ DBE) = 30° , m (∠ EBA) = 110°

∠ CBD is a right angle, find m (∠ ABC).

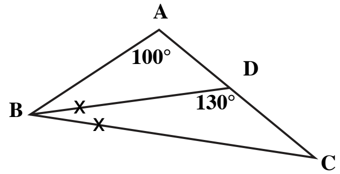



**5 a) In the opposite figure:**

$\overrightarrow{BD}$ bisects ∠ B

m (∠ A) = 100°, m (∠ BDC) = 130°

**Find: m (∠C)** (Giving reasons)




**b)** Draw △ ABC in which AB = AC = 5 cm and BC = 4 cm. Use the compasses to draw the perpendicular from A to $\overline{CB}$.

**Cairo 3** **El Sharabia Directorate - Talae El Mostakbal. Exp. School**

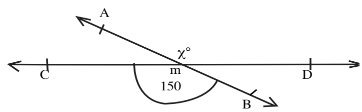
**1 Choose the correct answer:**

**1)** The supplementary of the acute angle is ……. angle.

a) zero b) acute c) right d) obtuse

**2) In the opposite figure:**

If $\overleftrightarrow{CD} \cap \overleftrightarrow{AB}$ = {m}, then x = …….°

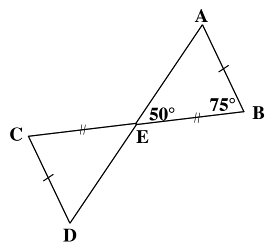



a) 70 b) 150

c) 65 d) 330

**3) In the opposite figure:**

**then m (∠ D) = …….°**

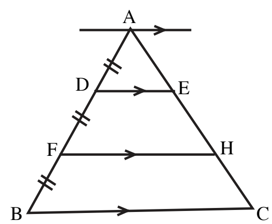



a) 39 b) 65

c) 25 d) 55

**4) In the opposite figure:**

**If AC = 12 cm, then AH = ……. cm**




a) 3 b) 4

c) 8 d) 9

**5) The sum of the measures of accumulative angles at a point is …….°**

a) 90 b) 360 c) 180 d) 270

## ❷ Complete:

1) When a transversal cuts two parallel lines, the alternate angles are ……. .

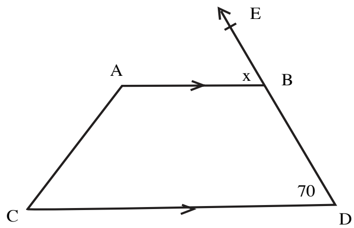
2) If m (∠ X) = 100°, then m (reflex ∠ X) = …….° .

3) The two triangles are congruent if two sides and ……. in one of then are congruent to their corresponding elements in the other.

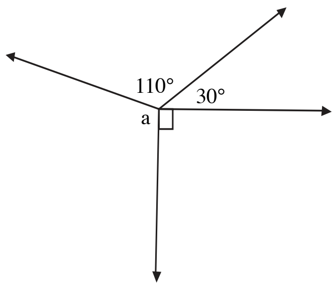
4) If triangle ABC is congruent to the triangle XYZ and m (∠ X) = 60° m (∠ B) = 50°, then m (∠ Z) = …….° .

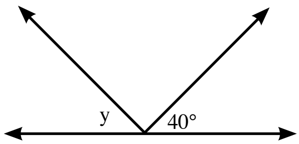
5) In the opposite figure:

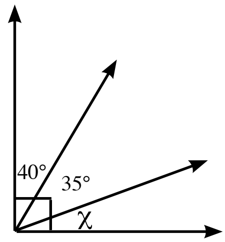
If $\overline{AB}$ // $\overline{CD}$ , then the value of x = …….




## ❸ a) Draw ∠ABC whose measure is 130 use ruler and compasses to bisect ∠ABC.



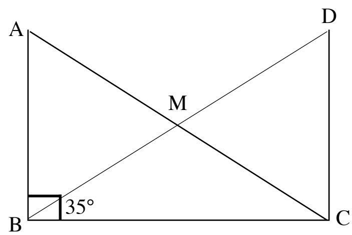




## ❹ a) In the opposite figure:

AB = CD, m (∠ DBC) = 35°

$\overline{AB}$ ⊥ $\overline{BC}$ and $\overline{DC}$ ⊥ $\overline{BC}$

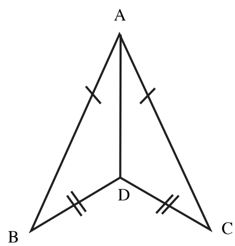
**Find: m (∠ BMC)**




### b) In the opposite figure:

DC = DB and AB = AC

Verify that: $\overline{AD}$ bisects (∠ ABC)

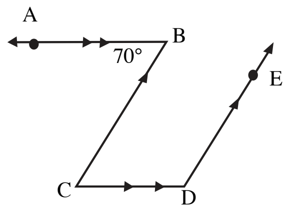


**5** **a) In the opposite figure:**

$\overrightarrow{AB} \parallel \overline{CD}$, $\overline{DE} \parallel \overline{CB}$

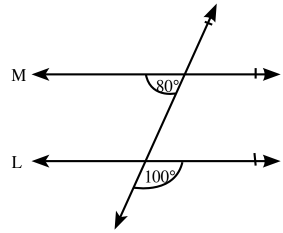
and m (∠ B) = 70°

**Find: m (∠ D)**




**b) In the opposite figure:**

Show that: $\overleftrightarrow{L} \parallel \overleftrightarrow{M}$




**Cairo** **4** **El Khalifa & Mokattam Educational Zone - Futures Languages Schools**

**1** **Choose the correct answer:**

1. If m (∠ A) = 70°, then m (reflex ∠ A) = .......

a) 110° b) 70° c) 210° d) 290°

2. If m (∠ x) + m (∠ y) = 90°, then ∠ x and ∠ y and .......

a) supplementary b) complementary

c) equal d) acute

3. If △ XYZ ≡ △ LMN, then ............

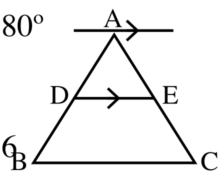
a) XY = MN b) XZ = LN c) XY = LN d) XZ = LM

4. The sum of the accumulative angles at a point equals .......

a) 90° b) 360° c) 270° d) 180°

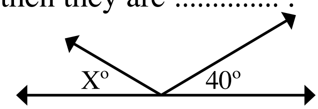
5. In the opposite figure: If AE = 8 cm, then AC = ....... cm

a) 41 b) 8 c) 12 d) 16




**2** **Complete:**

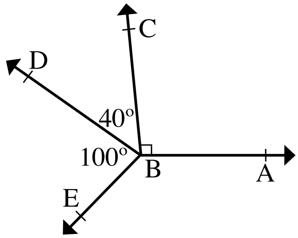
1. The two vertically opposite angles are ................ in measure.
2. Two angles are congruent if ............ .
3. If two straight lines are parallel to a third straight line, then they are .............. .
4. Any two triangles are congruent if ................ .
5. In the opposite figure: X = ................ °.



**3** **(a)** Draw ∠ XYZ its measure 80° (using the compass and the ruler) bisect ∠ XYZ (don't remove your arcs)

**(b) In the opposite figure:**

m (∠ ABC) = 90°, m (∠ CBD) = 40°
m (∠ DBE) = 100°. Find m (∠ ABE)

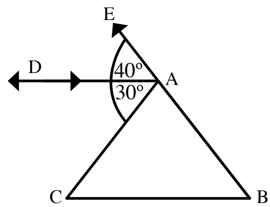



**4** **a) In the opposite figure:**

($\overrightarrow{AD}$ // $\overline{BD}$) m (∠ EAD) = 40°

m (∠ DAC) = 30°

**Find:** m (∠ C), m (∠ B), = and m (∠ BAC)

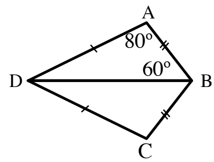



**b) In the opposite figure:**

AB = BC, DA = DC

m (∠ ABD) = 60°, m (∠ BAD) = 80°

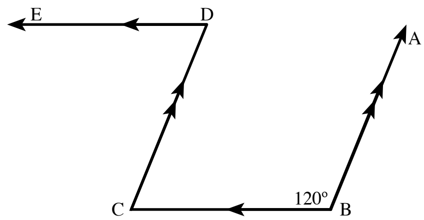
**Find:** m (∠ ADC)




**5** **a) In the opposite figure:**

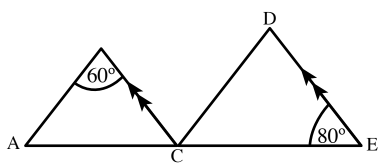
m (∠ B) = 120°, $\overrightarrow{BA}$ // $\overline{CD}$

$\overrightarrow{DE}$ // $\overline{BC}$, find m (∠ D)




**b) In the given figure:**

Show that $\overline{AB}$ // $\overline{CD}$




**Cairo 5** **Shoubra Education Zone - St. Catherine L. School**

**1** **Choose the correct answer:**

1. The sum of measures of the accumulative angles at a point is .......
   a) 180° b) 360° c) 90° d) 270°
2. If △ ABC ≡ △ XYZ, then .......
   a) AB = YZ b) AC = ZY c) AC = XY d) AC = XZ
3. If m (∠ A) = 170°, then m (reflex ∠ A) ............
   a) 90° b) 190° c) 100° d) 80°

4. An angle of measure 60° supplements an angle of measure.......

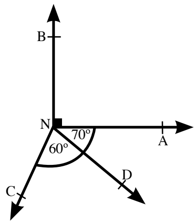
a) 60°    b) 90°    c) 120°    d) 30°

5. The angle of measure 72° complements to angle of measure .......

a) 108°    b) 90°    c) 18°    d) 180°

## 2 Complete:

**a)** In the opposite figure. m (∠ BNC) ................ .



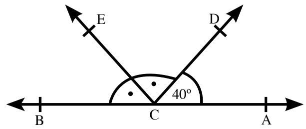

**b)** If a straight line intersects two parallel straight line, then each two alternate angles are ............ .

**c)** If a straight line intersects another straight line, then each two vertically opposite angles are .............. .

**d)** Two triangles are congruent if ................ .

**e)** In the opposite figure. $C \in \overleftrightarrow{AB}$,

then m (∠ BCE) = ................ °.




## 3 (a) Using the geometric tools, draw an angle of measure 80°, then bisect it (Don't remove the arcs)

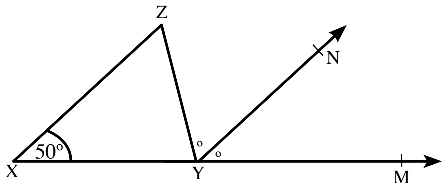
**(b) In the opposite figure:**

$\overrightarrow{YN}$ bisects

∠ MYZ where $M \in \overrightarrow{XY}$

m (∠ MYZ) = 100°

**Show that:** $\overline{XZ} \parallel \overrightarrow{YN}$

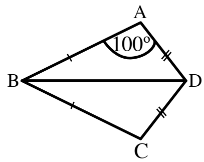



## 4 a) In the opposite figure. AB = BC:

AD = DC, m (∠ A) = 100°

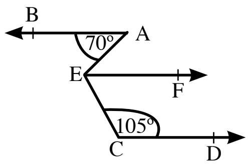
1. Given reasons why △ ABD ≡ △ CBD

2. Find m (∠ C)




**b)** $\overrightarrow{AB} \parallel \overrightarrow{EF} \parallel \overrightarrow{CD}$, m (∠ C) = 105°

m (∠ A) = 70° find m (∠ AEC)



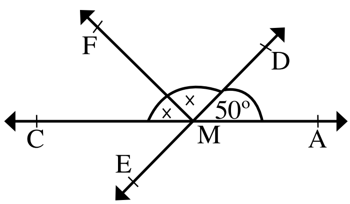

## 5 a) In the figure:

$\overleftrightarrow{AC} \cap \overleftrightarrow{DE} = \{ M \}$

$\overrightarrow{MF}$ bisects ∠ DMC,

m (∠ DMA) = 50°

Find m (∠ FMC), m (∠ CMC)



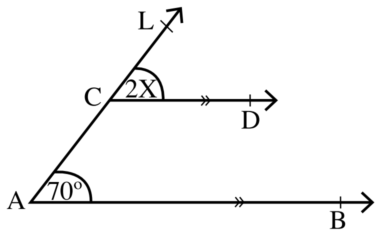
b) **In the opposite figure.**

$\overrightarrow{CD} \parallel \overrightarrow{AB}$

m (∠ A) = 70°

m (∠ LCD) = 2X

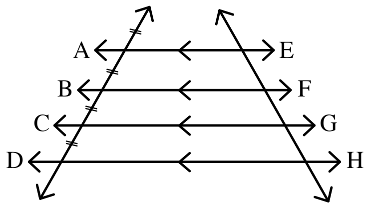
Find the value of X



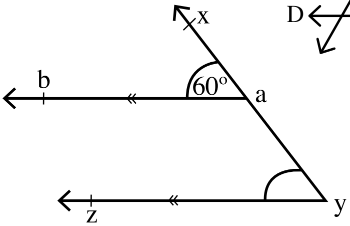

**Giza** **6** **Omrania Directorate - El-Neel Language School**

## 1 Choose the correct answer:

1. If m (∠ X) = 100°, then m (reflex ∠ X) = .......
   a) 80°  b) 100°  c) 360°  d) 260°
2. If △ ABC ≡ △ XYZ, then m (∠ A) = .......
   a) m (∠ C)  b) m (∠ X)  c) m (∠ Y)  d) m (∠ Z)
3. The angle of measure 70° complements the angle of measure ............
   a) 20°  b) 110°  c) 90°  d) zero
4. **In the opposite figure:**
   If EG = 9 cm, then GH = ............ cm
   a) 3  b) 6
   c) 9  d) 18




5. **In the opposite figure:**
   m (∠ Y) = ............
   a) 120°  b) 30°
   c) 60°  d) 180°




## 2 Complete each of following:

**a)** If two straight line intersect, then each two vertically opposite angles are ............

**b)** The supplement of angle whose measure 50° = ............ .

**c)** If $\overline{AB} = \overline{XY}$, AB = 5 cm then XY = ............. cm.

**d)** If $\overrightarrow{YX}$ bisects (∠ AXM), m (∠ AXY) = 40° then m (∠ YXM) = ................ .

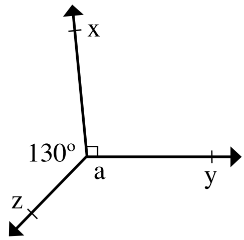
**e)** The sum of measure of the accumulative angles at point = ................ °.

**3** **(a)** Draw an angle whose vertex is A and its measure 120° use ruler and compasses to divide the angle into two equal angles (Don't remove the arcs)

**(b) In the opposite figure:**

m = (∠ XAY) = 90°, m (∠ XAZ) = 130°

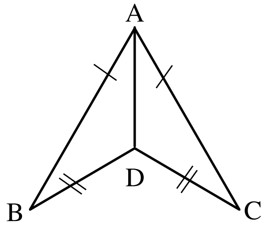
**Find:** m = (∠ ZAY)




**4 a) In the opposite figure:**

AC = AB, DC = DB

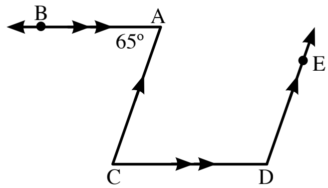
Prove that △ ACD = △ ABD




**b) In the opposite figure:**

$\overrightarrow{AB}$ // $\overrightarrow{CD}$ , $\overrightarrow{AC}$ // $\overrightarrow{DE}$ and m (∠A) = 65°

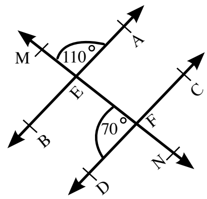
**Find:** m = (∠C) and m (∠D)




**5 (a)** The sum of areas of the squares on the sides of a right-angled triangle is........... (complete)

**b) In the opposite figure:**

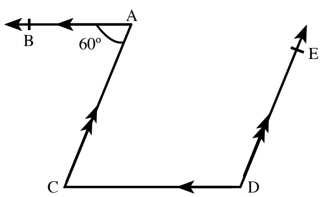
Show that: $\overleftrightarrow{AB}$ // $\overleftrightarrow{CD}$



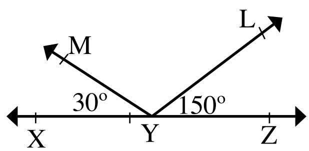

| Giza | 7 | 6th October Directorate - El Sheikh Zayed E. L. S. |
|---|---|---|

**1 Complete each of the following:**

1. The angle that its measure 82° complements the angle that its measure is .......
2. The two vertically opposite angles are ....... in measure.
3. If m (∠D) = 120°, then m (reflex ∠D) = .......
4. In the figure opposite:
   m (∠D) = .......




5. In the opposite figure:
   m (∠MYL) = .......°




**2 Choose the correct answer:**

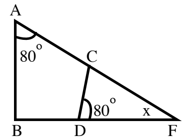
a) The supplements of the angle whose measure 117° is .......

a) 36° b) 63° c) 90° d) 243°

b) The sum of the measures of accumulative angles at a point is .......

a) 180° b) 90° c) 360° d) 270°

c) In the opposite figure:




If $\overline{AB} // \overline{CD}$ , then the value of (x) equal .......

a) 80° b) 60° c) 40° d) 20°

d) If: $L_1$, $L_2$ and $L_3$ are three coplanar straight lines and $L_1 // L_2$, $L_1 \perp L_3$, then .......

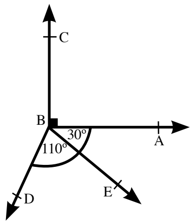
a) $L_1 // L_3$ b) $L_2 \perp L_3$ c) $L_1 \perp L_2$ d) $L_1 // L_2 // L_3$

e) Measure of a straight angle = .......

a) 90° b) 180° c) 270° d) 360°

**3** **(a)** Draw an angle with measure 130, then bisect it using geometrical tools. (Don't remove the arcs)

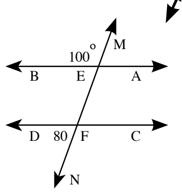
**(b) In the opposite figure:**




$\overrightarrow{BA} \perp \overrightarrow{BC}$ , m ( ∠ ABE) = 30 °

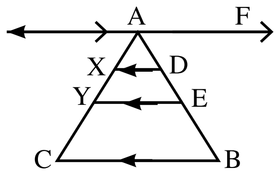
and m ( ∠ EBD) = 110°, find m (∠CBD)

**4** **(a) In the opposite figure:**




Show that: $\overleftrightarrow{DC} // \overleftrightarrow{AB}$

**(b) In the opposite figure:**

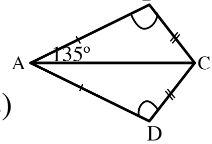



$\overleftrightarrow{AF} // \overleftrightarrow{DX} // \overleftrightarrow{EY} // \overleftrightarrow{BC}$ , AX = XY = YC

If AB = 15 cm, find: the length of $\overline{BE}$

**5** **(a) State two cases of congruency of two triangles.**

**(b) In the opposite figure:**




m (∠B) = m ( ∠ D) = 90, m ( ∠ BAC) = 35 °

and $\overline{BC} = \overline{DC}$ , find: m ( ∠DAC),m (∠BCD) (Give reasons)

## Giza 8 — El Dokki Directorate - Gamal Abd El Nasser E.L.S

**1** **Choose the correct answer:**

1) The sum of the measure of accumulative angles at a point is .......

a) 306° b) 180° c) 90° d) 360°

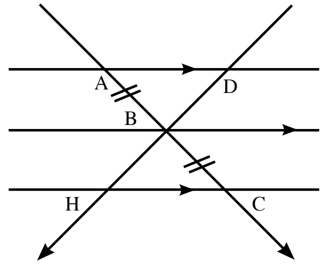
2) The △ ABC ≡ △ XYZ, m (∠ X) = 70°, then , m (∠ A) = .......

a) 110° b) 70° c) 20° d) 180°

3) If m (∠ A) = 120º, then m (reflex ∠ A) = …….

a) 60º  b) 70º  c) 240º  d) 120º

4) In the given figure




If BH= 6 cm,

Then BD = ……. cm

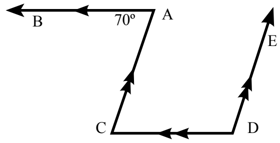
a) 3  b) 6

c) 9  d) 15

5) The supplement of an acute angle is ……. angle.

a) right  b) obtuse  c) acute  d) straight

## ❷ Complete each of the following:




1) In the opposite figure: $\overrightarrow{AB}$ // $\overline{CD}$ , $\overline{AC}$ // $\overrightarrow{DE}$.

m (∠ D)= …….

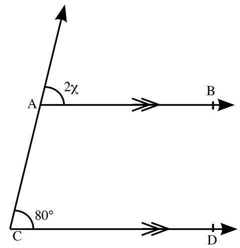
2) If a straight line intersects two parallel straight lines, then any two alternate angles are …….. .

3) Two triangle are congruent if two sides and ……. in one of them is congruent with the corresponding parts of the other.

4) If two straight lines intersect, then the measure of two vertically opposite angles are ……. in measure.

5) In the opposite figure: m (∠ C) = 80º

$\overrightarrow{AB}$ // $\overrightarrow{CD}$, then X = …….




❸ a) Using your geometrical tools to draw ∠ ABC of measure 70°, then bisect it.

(Don't remove the arce)

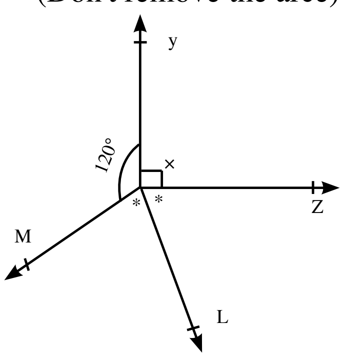
**b) In the opposite figure:**

$\overrightarrow{XY} \perp \overrightarrow{XZ}$

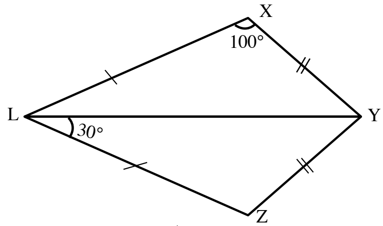
and $\overrightarrow{XL}$ is a bisector of ∠ ZXM

m (∠ YXM) = 120º

Find: m (∠ LXM)



**4** **a) In the opposite figure:**

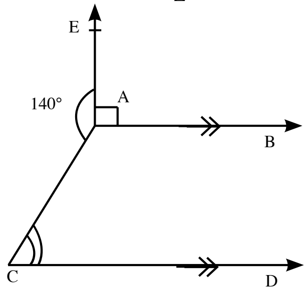



XY = YZ, XL = ZL

m ($\angle$ LXY) = 100°, m ($\angle$ ZLY) = 30°

Find: m ($\angle$ XYZ)

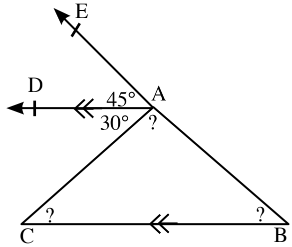
**b) In the opposite figure:**




$\overrightarrow{AB}$ // $\overrightarrow{CD}$, m ($\angle$ EAC) = 140°

Then find m ($\angle$ C)

**5** **a) In the opposite figure:**



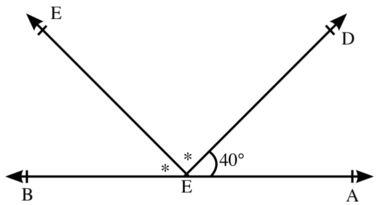

$\overrightarrow{AD}$ // $\overline{BC}$

m ($\angle$ EAD) = 45°

and m ($\angle$ DAC) = 45°

**find: m ($\angle$ C), m ($\angle$ B) and m ($\angle$ BAC)**

**b) In the opposite figure:**




$\overleftrightarrow{AB}$ ∩ $\overrightarrow{CD}$ = {C}

$\overrightarrow{CE}$ bisects $\angle$ BCD if m ($\angle$ ACD) = 40°

Find: m ($\angle$ BCE)

## Giza 9 Omrania Directorate - El Sadat Lang. School

**1** **Choose the correct answer:**

1) The angle of measure 60° complement an angle of measure .............

a) 50° b) 30° c) 120° d) 300°

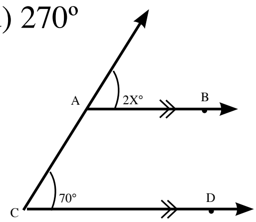
2) if: △ ABC ≡ △ XYZ, then $\overline{AB}$ ≡ .......

a) $\overline{BC}$ b) $\overline{YZ}$ c) $\overline{XZ}$ d) $\overline{XY}$

3) The sum of measures of the accumulative angles at a point .............

a) 360° b) 180° c) 90° d) 270°

4) In the opposite figure:




$\overrightarrow{AB}$ // $\overrightarrow{CD}$ , the value of X = .......

a) 40° b) 140°

c) 70° d) 35°

5) If: m ($\angle$ A) = 100, then m (reflex $\angle$ A) = .......

a) 80º b) 100º c) 260º d) 170º

## 2 Complete each of the following:

1) If a straight line intersects two parallel lines, then each two alternate angles are ....... .

2) The two vertically opposite angles are ....... in measure.

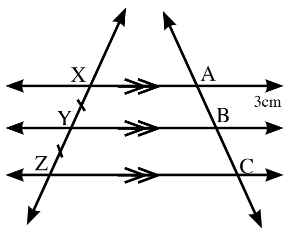
3) The two triangles are congruent if .......

4) If two adjacent angles are supplementary. Then their outer sides are ....... .

5) In the opposite figure:

$\overleftrightarrow{AX} \mathbin{/\!/} \overleftrightarrow{BY} \mathbin{/\!/} \overleftrightarrow{CZ}$ , AB = 3 cm.

and XY = YZ, then AC = ....... cm




## 3 a) Using the geometric instrument draw an angle of measure 120º, then bisect it.

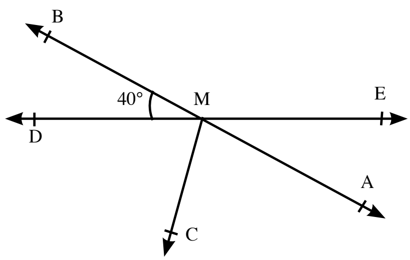
(Don't remove arcs)

**b) In the opposite figure:**

$\overleftrightarrow{AB} \cap \overleftrightarrow{DE}$ = {M}, $\overrightarrow{MC}$ bisects $\angle$ DMA

m ($\angle$ BMD) = 40º

Find: m ($\angle$ EMA), m ($\angle$ DMC)

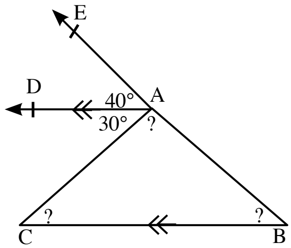



## 4 a) In the opposite figure:

$\overrightarrow{AD} \mathbin{/\!/} \overline{BC}$ , m ($\angle$ EAD) = 40˚

m ($\angle$ DAC) = 30º

Find: m ($\angle$ C), m ($\angle$ B) and m ($\angle$ BAC)

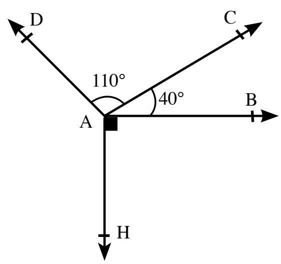



**b) In the opposite figure:**

m ($\angle$ BAH) = 90º , m ($\angle$ BAC) = 40º

m ($\angle$ CAD) = 110º

Find: m ($\angle$ DAH)

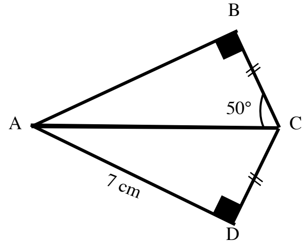


**5** **a) In the opposite figure:**

$\overline{BC} \equiv \overline{DC}$

m ($\angle$ B) = m ($\angle$ D) = 90º

AD = 7 cm, and m ($\angle$ BCA) = 50



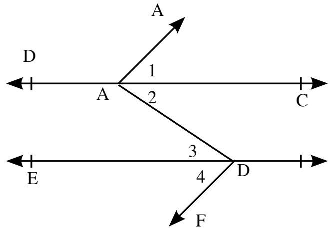

**Complete:**

(1) $\triangle$ ABC ≡ $\triangle$ ……. (2) AB = ……. cm

(3) m ($\angle$ BAD) = ……. º

**b) In the opposite figure:**

m ($\angle$ 1) = m ($\angle$ 4), $\overleftrightarrow{BC}$ // $\overleftrightarrow{ED}$, show that $\overrightarrow{BA}$ // $\overrightarrow{DF}$




**Alexandria 10** **Wasat Educational Directorate - Sunshine Language School**

**1** **Complete:**

1) If two straight lines are parallel to a third straight line, then they are …….

2) If $\angle$ A complements $\angle$ B and m ($\angle$ A) = 2m ($\angle$ B), then m ($\angle$ A) = ……. º

3) The two vertically opposite angles are ……. .

4) If m ($\angle$ ABC) = 85º , then m (reflex $\angle$ ABC) = ……. .

5) Tw angles are congruent if they are ……. .

**2** **Choose the correct answer:**

1) If $\triangle$ABC ≡ $\triangle$XYZ, then $\overline{BC}$ ≡ …….

a) $\overline{XY}$ b) $\overline{YZ}$ c) $\overline{XZ}$ d) $\overline{AB}$

2) The angle of measure 50º complements the angle of measure …….

a) 140º b) 130º c) 50º d) 40º

3) The acute angle supplements ……. angle.

a) acute b) right c) obtuse d) straight

4) The value of X = ……. º

a) 40º b) 60º c) 80º d) 100º

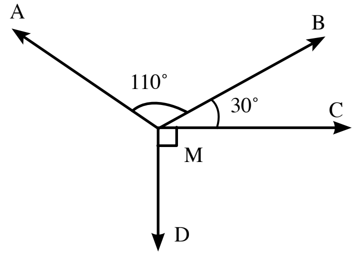
5) The sum of the acummulative angles at a point is .............

a) 306º b) 180º c) 90º d) 360º

**3** **a)** Draw an angle XYZ of measure 110º, then draw $\overrightarrow{YL}$ bisect it by using the compasses.

**b) In the opposite figure:**

find m (∠AMD)




**4** **a)** If a straightk line intersects two parallel straight lines, then every two interior angle on one side of transversal are ................ .

**b) In the opposite figure:**

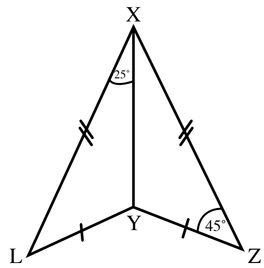
XZ = XL, YZ = YL

m (∠Z) = 45º

and m (∠YXL) = 25º

Prove that △XYZ ≡ △ XYL

Find m (reflex ∠ZYL)

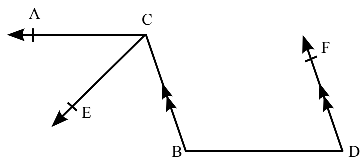



**5** **a) In the opposite figure:**

$\overline{AC}$ // $\overline{DB}$, $\overline{CB}$ // $\overline{FD}$ and $\overline{CE}$ bisects ∠ACB

m (∠ACE) = 55º

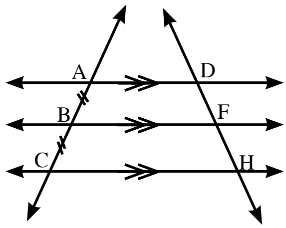
Find m (∠CBD), m (∠D)




**b) In the opposite figure:**

If DH = 12 cm, then

DE = ............ cm

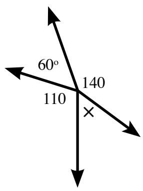



## Alexandria 11 — Mid. Educational Zone - El Orwa Exp. School For Boys

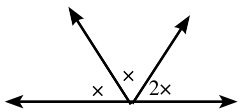
**1** **Complete the following:**

a) If a straight line intersects two parallel straight lines, then every two alternate angles are ......

b) In the opposite figure, x = ............. °




c) In the opposite figure, x = ..............°



d) The straight line which is perpendicular to one of two parallel straight lines is ........ the other.
e) Two triangles are congruent if ..........................

## ❷ Choose the correct answer:

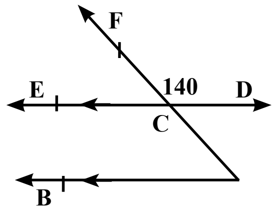
a) Two adjacent angles formed by a straight line and a ray are.............
[equal , supplementary , complementary , congruent ]

b) The sum of measure of accumulative angles at one point = .............
[90° , 180° , 270 , two straight angles ]

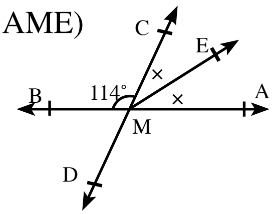
c) If $\Delta$ ABC $\equiv$ $\Delta$ XYZ, then AC = ............. [XY , YZ , XZ , BC]

d) If $\angle$A complement $\angle$ B, m ($\angle$A) = m ($\angle$ B), then m ($\angle$A)
[90° , 180° , 45° , 60° ]

e) In the opposite figure $\overrightarrow{AB}$// $\overleftrightarrow{AB}$, m ($\angle$FCD) =140, then m ($\angle$A) = ...... [80° , 40° , 20° , 100° ]

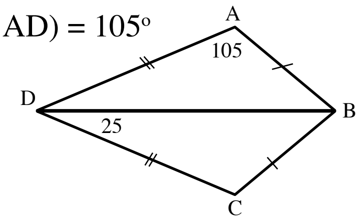



❸ a) In the figure opposite, $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are bisecting at M, $\overrightarrow{ME}$ bisects $\angle$ AMC, M ($\angle$BMC) = 114° . Find m ($\angle$AMC), ($\angle$ AMD), and ($\angle$ AME)




b) Use the ruler and the compasses to draw the equilateral $\Delta$ABC of side 6 cm, draw $\overline{AD}$ $\perp$ $\overleftrightarrow{BC}$ where $\overrightarrow{AD}$ $\perp$ $\overline{BC}$ = {D}. What the length of $\overline{AD}$. (Don't remove the arcs)

❹ a) In the opposite figure AB = BC, AD = CD , m ($\angle$BAD) = 105°
m ($\angle$BDC) = 25°. Find m ($\angle$ABD).

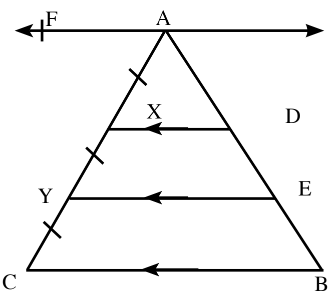



b) In the opposite figure $\overleftrightarrow{AF}$//$\overleftrightarrow{DX}$// $\overleftrightarrow{EY}$//$\overleftrightarrow{BC}$

AX = XY = YC

If AB = 15 cm

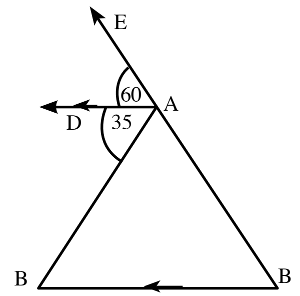
Find the length of $\overline{BE}$, $\overline{BD}$.



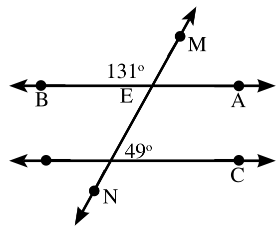
**5** a) In the opposite figure $\overrightarrow{AD} \mathbin{/\mkern-6mu/} \overline{BC}$ , m ($\angle$DAC) = 35°

m ($\angle$ EAD) = 60°. Find measure of the interior

angles of $\Delta$ ABC




b) In the opposite figure show that $\overleftrightarrow{AB} \mathbin{/\mkern-6mu/} \overleftrightarrow{CD}$




**Qalubia** **12** **Kafer Shokr Educational Direcatorate**

## 1 Complete:

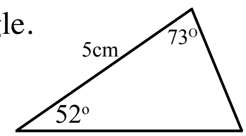
a) If m ($\angle$ X) = 120° then m (reflex $\angle$ X) = ............° .

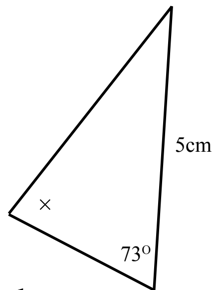
b) the straight angle supplements .... angle.

c) In this figure:

these triangles are congruent.

then x = ............° .




d) Two triangles are congruent if two sides and ............ angle of triangle are congruent to the corresponding parts of the other triangle.

e) If a straight line intersects two parallel straight lines, then each two corresponding angles are ............ .

## 2 Choose the correct answer:

a) The complement of angle whose measure 50° is ............°

{50 or 130 or 40 or 310}

b) If the two straight lines are parallel to a third straight, then they are ............ .

{perpendicular or parallel or congruent or on the same straight line}

c) The axis of symmetry of a line segment is ............ .

{perpendicular it or bisecting it or parallel it or perpendicular and bisecting it}

d) The two bisectors of two adjacent supplementary angles ............. .

{are parallel or are perpendicular or are congruent or included an acute angle between them}

e) If two straight lines intersected, the every two vertically opposite angles are ......

{complementary or supplementary or equal in measure or alternate}

**3** **a)** Using the geometric tools to draw $\angle$ ABC an straight angle

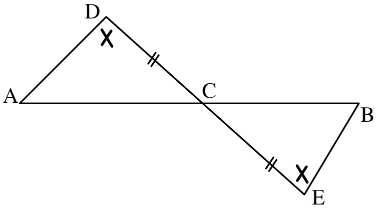
The $\overrightarrow{BX}$ bisects it. Find the measure of ($\angle$ XBA) (Don't remove arcs)

b) In the opposite figure $\overline{AB} \cap \overline{DE}$ = { C }

EC = DC , m ($\angle$ E) = m ($\angle$ D) Prove that:

1. $\Delta$ AEC = DBC

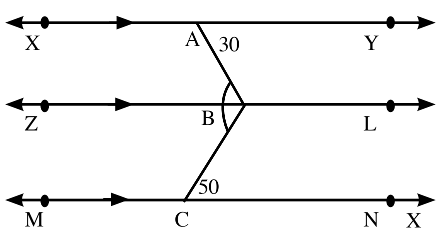
2. Write one state of the cases of congruence.




**4** a) In the opposite figure $\overleftrightarrow{XY}$ // $\overleftrightarrow{ZL}$ // $\overleftrightarrow{MN}$

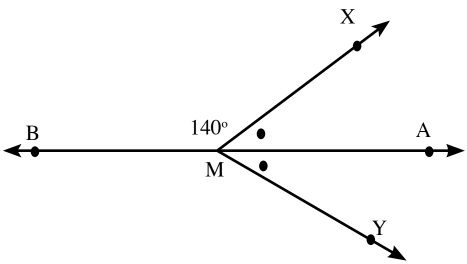
m ($\angle$ YAB) = 30°, m ($\angle$ NCB) = 50°

Find m ($\angle$ ABC)




b) In the opposite figure $\overleftrightarrow{XY}$, $\overrightarrow{MA}$ bisect $\angle$ YMX

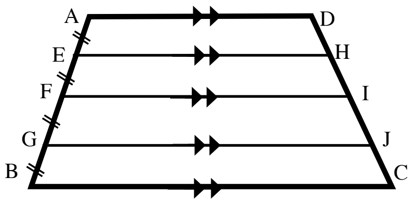
m ($\angle$ XMB) = 140° Find m ($\angle$ XMY)




**5** **a)** In the opposite figure:

If DC = 16 cm,

then find the length of DI.

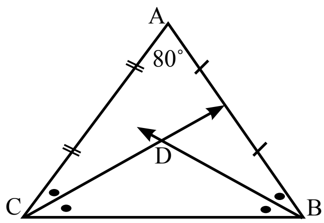



**b)** In the opposite figure

$\angle$ ABC which m $\angle$ A) = 80°

$\overrightarrow{BD}$ bisects $\angle$ B, $\overrightarrow{CD}$ bisects $\angle$ C

Find m ($\angle$ BDC)



# 1 Complete:

a) The sum of the accumulative angles at a point equals ............. .

b) If m (∠ A) = 110°, then m (reflex ∠ A) = ............. .

c) The angle of measure 40° complements angle of measure ............. .

d) The two vertically opposite angles are ............. in measure.

e) The supplement of an acute angles is ............. angle.

## 2 Choose the correct answer:

a) The supplementary of the angle that its measure equals 70° is ............. .

1. 110° 2. 120° 3. 90° 4. 20°

b) The straight angle its measure is ............. .

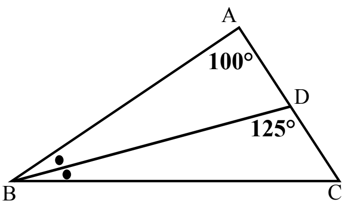
1. 90° 2. 180° 3. 45° 4. 360°

c) In this figure:

ABC is a triangle, D ∈ $\overline{AC}$ and

$\overrightarrow{BD}$ is a bisector of ∠ B,

What is the measure of ∠ C?




1. 25° 2. 30° 3. 45° 4. 55°

d) The type of the triangle of its measure 90° is ............. .

1. right 2. acute 3. obtuse 4. straight

e) 3X° and 75° are supplementary angles, then X = ............. .

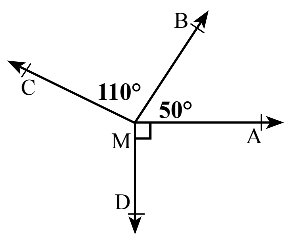
1. 25° 2. 35° 3. 45° 4. 105°

**3 a)** Draw ∠ ABC its measure 120° (using the compass and the ruler) bisect < ABC. (Don't remove the arcs)

**b) In the opposite figure:**

m (∠ AMB) = 50° , m (∠ AMD) = 90°

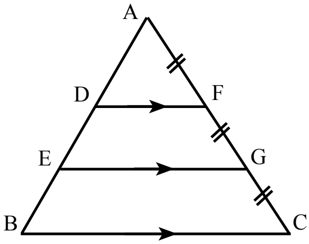
and m (∠ BMC) = 110°. Find the m (∠ CMD)



**4 a) In the opposite figure:**

If DE = 5 cm, then

Find the length of $\overline{AB}$.

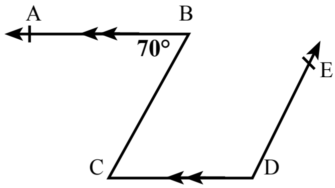



**b) In the opposite figure:**

$\overrightarrow{BA}$ // $\overline{CD}$, $\overline{CB}$ // $\overrightarrow{DE}$

M ($\angle$ B) = 70°

Find m ($\angle$ C) and m ($\angle$ D)



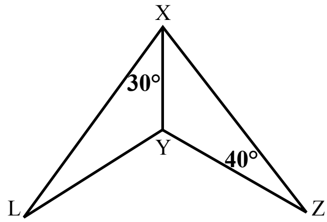

**5 a) In the opposite figure:**

m ($\angle$ Y X L) = 30° , m ($\angle$ Y Z X) = 40°

**Complete:**

1. m ($\angle$ Y X Z) = .............°.

2. m ($\angle$ L) = .............° , m reflex ($\angle$ Z Y L) = ............. °.

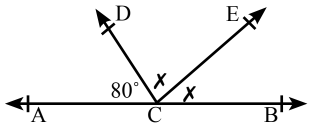



**b) In the opposite figure:**

$\overrightarrow{AB}$ $\overrightarrow{CD}$ = { C }

$\overrightarrow{CE}$ bisects ($\angle$ B C D) if m ($\angle$ A C D) = 80°

Find: m ($\angle$ B C E)




## Dakahlia 14 Fakher Language Schools

**1 Complete:**

**a)** If the sum measures of two adjacent angles are 180°, then their outer sides are .................

**b)** If two St. lines intersect, then ............... are equal in measure.

**c)** If m ($\angle$ A) = 150°, then m (reflex $\angle$ A) = ................. °

**d)** If $\triangle$ ABC, $\triangle$ XYZ are congruent, then $\angle$ Z ≡ .................

**e)** When a transversal cuts two parallel lines, then the interior angles on the same side of the transversal are .................

## ❷ Choose the correct answer:

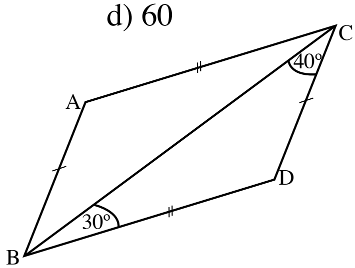
1. Which of the following two angles are complementary?

a) 22°, 68° b) 55°, 45° c) 60°, 60° d) 100°, 80°

2. If $\Delta$ ABC ≡ XYZ, and m (∠ A) = 100°, m (∠ Y) = 40°, then m (∠ C) = ................

a) 70 b) 40 c) 90 d) 60

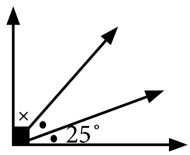
3. In the given figure m (∠ A) = ................




a) 30 b) 40

c) 70 d) 100°

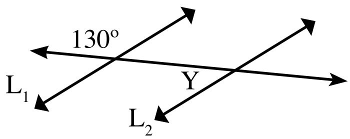
4. Using the figure: X = ................°




a) 40 b) 60

c) 30 d) 45

5) If $L_1$ // $L_2$, then, Y = ................°

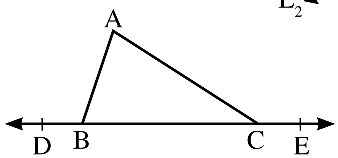



a) 30 b) 60

c) 120 d) 50

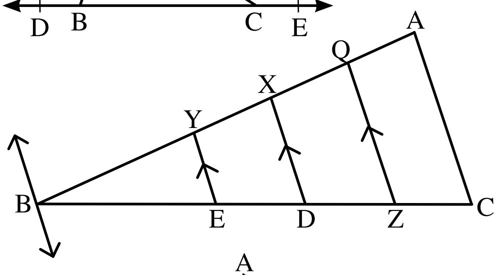
❸ **A)** In the opposite figure, m (∠ A) = 100°,

m (< ABD) = 145°. Find m (∠ ACE)



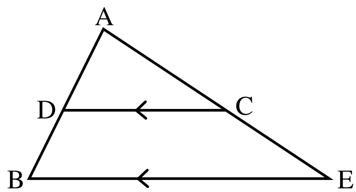

**B)** If AQ = QX = XY = YB, DE = 2 cm

**Find:** BC

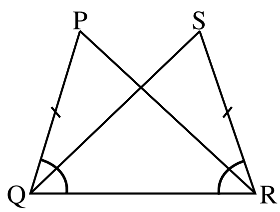



❹ **A)** If m (∠ A) = 80°, m (∠ ACD) = 70°.

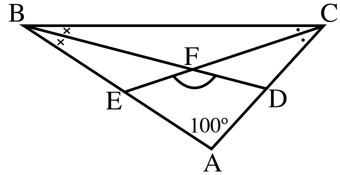
Find the value of ∠ B




**B)** Are the two triangles PQR, and SRQ congruent? Why?



**5** **Using the figure $\overline{CE}$ bisects ∠ C, $\overline{BD}$ bisects ∠ B, m (∠ DFE)**




## Behera 15 — Rasheed Education Zone – Rosetta Language School

**1** **Complete:**

a) The type of the angle of measure 89° 60 is ............. .

b) If m (∠ A) = 70°, then m (reflex ∠ A) = ............. °.

c) If Δ XYZ ≡ Δ LMN, then $\overline{YZ}$ ≡ ............. .

d) The straight line that is perpendicular to one of two parallel lines is also ............. .

e) The two triangles are congruent if two sides and ............. in one of them are congruent to their corresponding from the other.

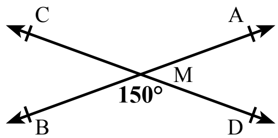
**2** **Choose the correct answer:**

**a) In the opposite figure:**

$\overline{AB}$ $\overline{DC}$ = {M}, m (< DMB) = 150°,

then m (∠ AMC) = ............. .

(30°, 150°, 90°, 180°)



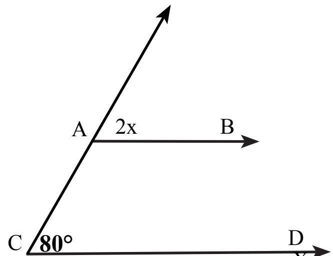

**b)** The acute angle supplements ............. angle

(acute, obtuse, right, straight)

**c) In the opposite figure:**

$\overrightarrow{AB}$ // $\overrightarrow{CD}$, then x = ............. .

(40° , 80°, 120° , 20°)

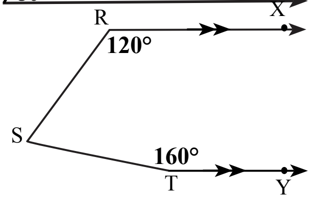



d) The supplement of the angle of measure 70° is ............. .

(20° , 110° , 40°, 270°)

e) Calculate m (∠ RST)

(Hint: Draw a line passing through S parallel to $\overrightarrow{RX}$ and $\overrightarrow{TY}$)



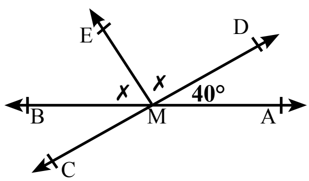

**3** **a) In the opposite figure:**

$\overleftrightarrow{AB}$ $\overleftrightarrow{DC}$ = {M}

$\overrightarrow{ME}$ bisects ∠ DMB

and m (∠ AMD)= 40°

**Find:** (1) m (∠ AMC) (2) m (∠ EMB)



**b)** Draw $\angle$ XYZ of measure 125°, then use the ruler and the compass to bisect it by $\overrightarrow{YL}$ (Don't remove the arcs)

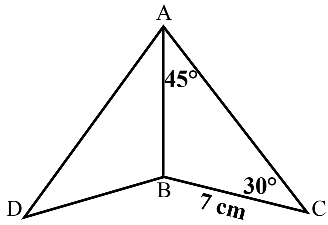
**4 a) In the opposite figure:**

If $\Delta$ ABC ≡ $\Delta$ ABD,

m ($\angle$ BAC) = 45°, m ($\angle$ C) = 30°

BC = 7 cm, then find

1. the length of $\overline{BD}$
2. m ($\angle$ ABC)
3. m ($\angle$ ABD)
4. m ($\angle$ ADB)

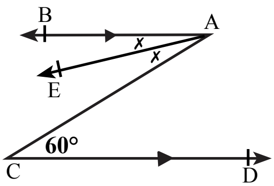



**5 a) In the opposite figure:**

$\overrightarrow{AB}$ // CD, AE bisects < BAC

m ($\angle$ C) = 60°

find m ($\angle$ BAE)



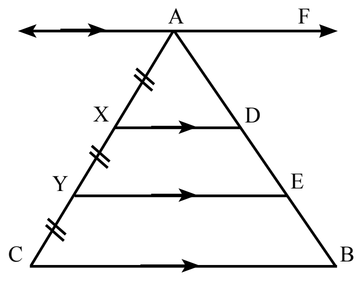

**b) In the opposite figure:**

$\overleftrightarrow{AF}$ // $\overleftrightarrow{DX}$ // $\overleftrightarrow{EY}$ // $\overleftrightarrow{BC}$

AX = YX = YC

If AB = 12 cm

Find the length of $\overline{BE}$

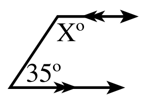



## Port Said 16 — Educational Directorate - South education - El-Dwahy Section

**1 Choose the correct answer:**

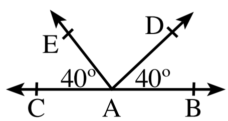
1. The value of x° in the figure opposite is ............. .

a) 1. 55° b) 2. 35° c) 145° d) 180°




2. In the figure opposite m ($\angle$ DAE) = ............. .

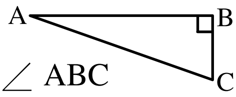
a) 90° b) 100° c) 120° d) 60



3. Two angles are said be complementary if their sum is ............. .

a) 90°   b) 180°   c) 360°   d) 120°

4. In this triangle the hypotenuse is ............. .




a) $\overline{AB}$   b) $\overline{BC}$   c) $\overline{CA}$   d) ∠ ABC

e) If m (∠ A) = 60°, then m (reflex ∠ A)= ............. .

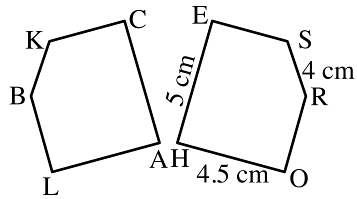
a) 180°   b) 120°   c) 30°   d) 300°

**2 a) Complete:**

a) A straight line that is parallel to one of two parallel lines is ............. to the other.

b) If two straight lines intersect, then the measures of each two vertically opposite angles are ............. .

**b) The two pentagons shown are congruent.**

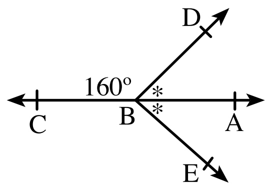



**Complete:** a) B corresponds to ............. .

b) KB = ............. cm.

c) m (∠ E) = m (∠ .............).

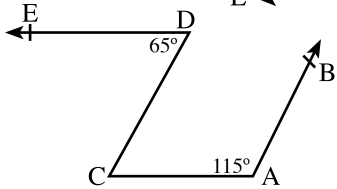
**3 a)** In the figure opposite, if B ∈ $\overleftrightarrow{AC}$,




m (∠ DBC) = 116° and BA bisects (∠ DBE)

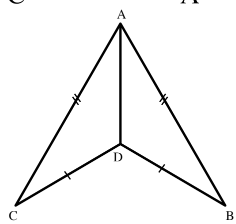
Find m (∠ ABD), m (∠ DBE), m (∠ CBE)

**b)** In the figure opposite, if $\overrightarrow{AB}$ // $\overline{CD}$,



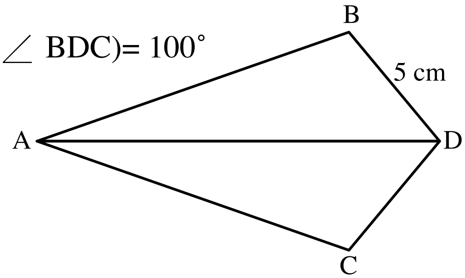

Does $\overline{AC}$ // $\overline{DE}$? Why?

**4 a)** In the figure opposite AB = AC, BD = CD




Dose △ ADC ≡ △ ADB? Why?

**b)** In the figure opposite △ ABC ≡ △ ACD, m (∠ BDC)= 100°



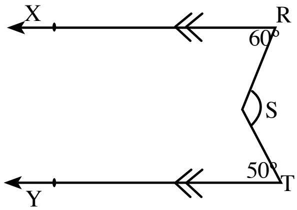

**Study the case of congruency, then deduce:**

a) m (∠ BDA)   b) length $\overline{CD}$

**5** **a)** Draw ∠ ABC whose measure is 90°, use the ruler and compasses to bisect ∠ ABC

**b)** In the given figure calculate

m (∠ RST)




**Suez** **17** **South Educational Zone - Future Language School**

## 1 Complete the following to be correct:

a) Two angles are said be complementary if their sum is ............. .

b) If: m (∠ A) = 110°, then m (reflex ∠ A) ............. °.

c) The two vertically opposite angles are ............. .

d) Any two triangles are congruent if ............. .

e) The measure of the straight angle= ............. .

## 2 Choose the correct answer:

a) The angle of measure 40° complements an angle of measure ............. .

1. 50°   2. 330°   3. 60°   4. 140°

b) If: Δ ABC ≡ Δ XYZ, then $\overline{AB}$ ≡ ............. .

1. $\overline{XY}$   2. $\overline{YZ}$   3. $\overline{XZ}$   4. $\overline{LM}$

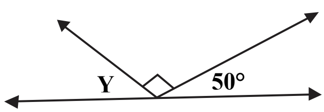
c) The sum of measures of the accumulative angles at a point = ............. .

1. 360°   2. 180°   3. 90°   4. 270°

d) $\overline{AB}$ ............. $\overleftrightarrow{AB}$ .

1.   2.   3.   4.

e) In the opposite figure: y= ............. .



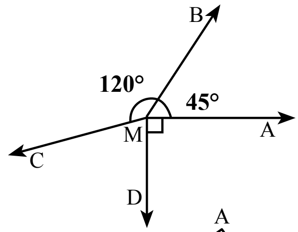

1. 50°   2. 60°

3. 40°   4. 90°

**3** **a)** Draw $\angle$ABC it's measure 90° (using the compass and the ruler) bisect $\angle$ABC (Don't remove the arcs).

**b) In the opposite figure:**

m ($\angle$AMB) = 45°, m ($\angle$AMD) = 90° and m ($\angle$CMB) = 120° find : m ($\angle$CMD)

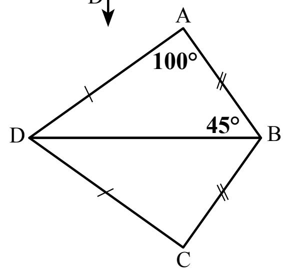



**4** **a) In the opposite figure:**

AB = BC , DA = DC

m ($\angle$ ABD) = 45° and m ($\angle$ BAD) = 100°

Find: m (< ADC)



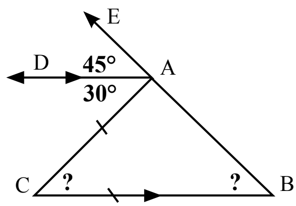

**b) In the opposite figure:**

$\overrightarrow{AD}$ // $\overline{BC}$, m ($\angle$ EAD) = 45° and m ($\angle$ DAC) = 30°

Find: m ($\angle$ E)= 90°, DE = 5 cm

and FE = 12 cm

Find: $(DF)^2$




**5** **a) In the opposite figure:**

**Thw two pentagon shown are congruent**

**Complete:**

a) B correspond to ............. .

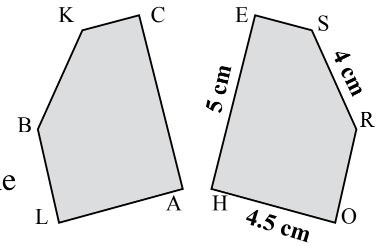
b) The polygon BLACK is congruent to the polygon ............. .

c) KB = ............. cm.

d) m ($\angle$ E) = m ($\angle$ ............. )

e) CA = ............. .

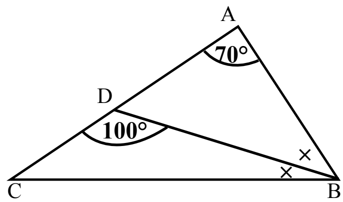
f) m ($\angle$A) = .......... m ($\angle$ .............)




**b) In the opposite figure:**

$\overrightarrow{BD}$ bisects $\angle$ A = 70° and m ($\angle$ CDB) = 100°

Find: m ($\angle$ C)



## 1 Choose the correct answer:

a) If m ($\angle$ A) = 160°, then m (reflex $\angle$ A) = ............. .

1) 100° 2) 80° 3) 160° 4) 200°

b) If: Δ ABC ≡ Δ XYZ, then $\overline{BC}$ ≡ ............. .

1) $\overline{XY}$ 2) $\overline{YZ}$ 3) $\overline{XZ}$ 4) $\overline{AB}$

c) The angle of measure 70° complements an angle of measure ............. .

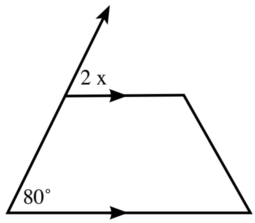
1) 120° 2) 20° 3) 110° 4) 90°

d) If a straight line intersects two parallel lines, then each two alternate angles are ....

1) equal in measure 2) supplementary 3) complementary 4) adjacent

e) In this figure: What is the value of x?

1) 40° 2) 60° 3) 80° 4) 100°




## 2 Complete the following:

a) The sum of the measures of the accumulative angles at point = ............. .

b) Two triangles are congruent if two angles and ............. are congruent to their corresponding in the other triangle.

c) If two straight lines are parallel to third line, then they are ............. .

d) The measure of the straight angle = ............. .

e) If: $\overline{AB}$ ≡ $\overline{CD}$ then AB - CD = ............. .

## 3

a) Using your geometrical tools to draw $\angle$ ABC of measure 70° then bisect it.

b) In the opposite figure:

AXYD ≡ BXYC, XB = 2 cm, DC = 8 cm, and BC = 3 cm

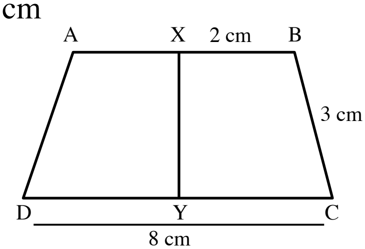
Complete: 1) M ($\angle$ BCY) = M ($\angle$ .............)

2) AB = ............. cm

3) DY ............. cm

4) M ($\angle$ BXY) = .............°

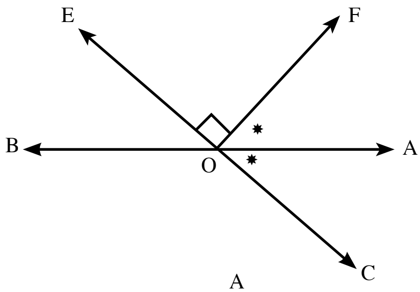
5) The perimeter of the figure ABCD = ............. cm



**4** a) In the opposite figure:

$\overleftrightarrow{AB} \cap \overleftrightarrow{EC} = \{0\}$, m ($\angle$ FOA) = m ($\angle$ COA)

Find: 1) m ($\angle$ AOC) 2) m ($\angle$ COB)

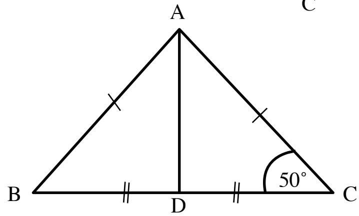



b) In the figure opposite:

AB = AC and DB = DC, m ($\angle$ C) = 50°

- IS $\Delta$ ADC $\equiv$ $\Delta$ ADB? Give reasons.

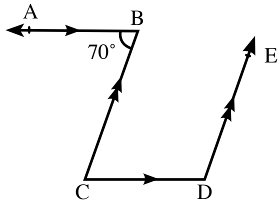
- FIND: m ($\angle$ B)




**5** a) In the opposite figure:

$\overrightarrow{BA}$ // $\overline{CD}$ , $\overrightarrow{DE}$ // $\overline{CB}$ and m ($\angle$B) = 70°

Find : M ($\angle$ D)

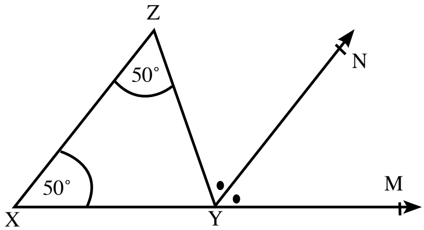



b) In the opposite figure:

$\overrightarrow{YN}$ bisects

MYZ where M $\in$ $\overrightarrow{XY}$

Show that: $\overline{XZ}$ // $\overrightarrow{YN}$



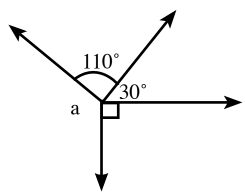

## Minia 19 — Minia Educational Zone

**1 Complete:**

a) The sum of two complementary angles = ............. °.

b) The longest side in the right-angled triangle is ............. .

c) In the opposite figure: a = ............. .




d) If two straight lines intersect, then the measure of each two vertically opposite angles are ............. .

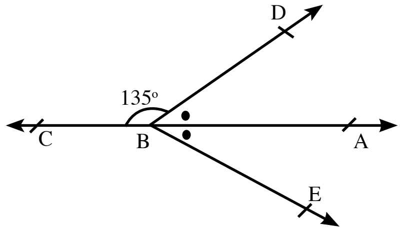
e) When a transversal cuts two parallel lines, then the alternate angles are ............. .

## ❷ Choose:

a) The sum of measures of the accumulative angles at a point is .............$^\circ$ .

(180$^\circ$ - 90$^\circ$ - 306$^\circ$ - 360$^\circ$)

b) In the figure M $\angle$ DBE = .............$^\circ$. (134$^\circ$ - 45$^\circ$ - 90$^\circ$ - 180$^\circ$)



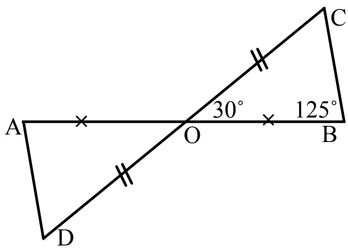

c) The type of angle of measure 190$^\circ$ is ............. . (straight - right - obtuse - reflex)

d) The supplements of the angle 117$^\circ$ is ............. . (73$^\circ$ - 63$^\circ$ - 117$^\circ$ - 27$^\circ$)

e) OC = OD, OB = OA, m $\angle$ (COB) = 30$^\circ$

m (< B) = 125$^\circ$ then m $\angle$ D equals ............. .

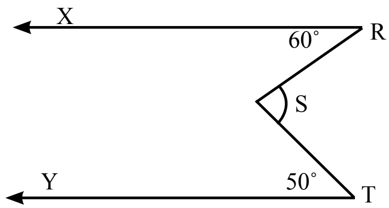
(25$^\circ$ , 60$^\circ$ , 30$^\circ$ , 125$^\circ$)




❸ a) State two cases of congruency of two triangles?

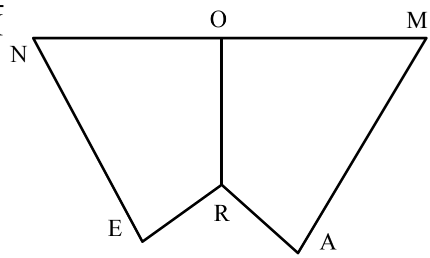
b) In the figure opposite $\overrightarrow{RX}$ // $\overrightarrow{TY}$ , m ($\angle$ R) = 60$^\circ$

m (T) = 50$^\circ$. Calculate m ($\angle$ RST)




## ❹ In the figure opposite.

$\overleftrightarrow{OR}$ is the axis of symmetry of NERAM, O $\in$ $\overline{NM}$




a) **Complete:**

The quadrilateral NERO is congruent to the quadrilateral ............. .

- The common side of the two congruent quadrilaterals is ............. .

b) In your own words explain why each of the following statements must be true.

1. O is the mid-point of $\overline{NM}$.

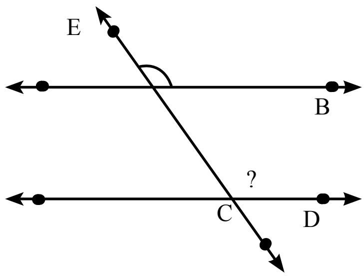
2. ∠ NOR is congruent to ∠ M O R

3. $\overline{RO} \perp \overline{NM}$

4. $\overline{OR}$ is congruent to $\overline{OR}$

**5** a) $\overleftrightarrow{AB}$ // $\overleftrightarrow{CD}$ then complete:

m (∠ ACD) = m (∠ .............) = .............°



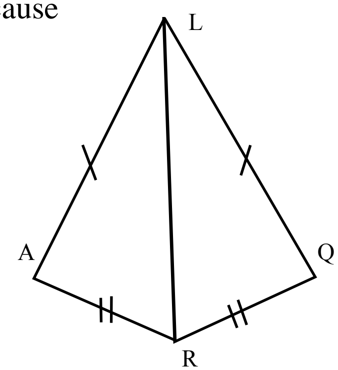

b) In the figure opposite:

Δ ............. ≡ Δ ............. because

L Q = ............. .

L R is ............. .

AR = ............. .




**Sohag** **20** **Tema Educational Zone**

**1** **Choose the correct answer:**

a) The sum of the measure of accumulative angles at point is ............. .

1. 90°   b) 108°   c) 180°   d) 360°

b) The complement angle of the angle whose measure 65° is.........

1. 15°   2.150°   3. 180°   4. 295°

c) If $L_1$ // $L_2$ and $L_1$ // $L_3$ then ............. .

1. $L_2$ // $L_3$   2. $L_2 \perp L_3$   3. $L_2$ intersects $L_3$   4. $L_1 \perp L_2$

d) m (∠ A) 100°, then m (reflex ∠ A) = ............. .

1. 80°   2. 100°   3. 260°   4. 170°

e) It Δ ABC in which m (∠ A) + m (∠ B) = 125 then m (∠ C) = ............. .

1. 55°   2. 65°   3.35°   4. 105°

**2** **Complete each of the following:**

a) Every two vertically opposite angles are ............. .

b) If: ∠ X ∠ Y then m (∠ X) - m (∠ Y) = ............. .

c) The outer sides of two adjacent supplementary angles are ............. .

d) If Δ ABC = Δ XYS then AC = ............. .

e) If $L_1 \cap L_2 = \varnothing$ then $L_1$ ............. $L_2$.

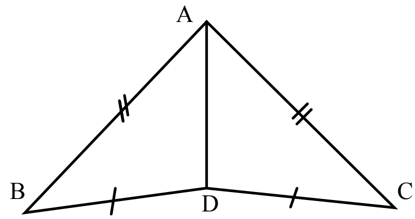
**3** a) **Complete:**

Two triangles are congruent if each side of one triangle are ............. .

d) In the opposite figure

AC = AB , DC = DB

Prove that $\overrightarrow{AD}$ bisects ∠ BAC



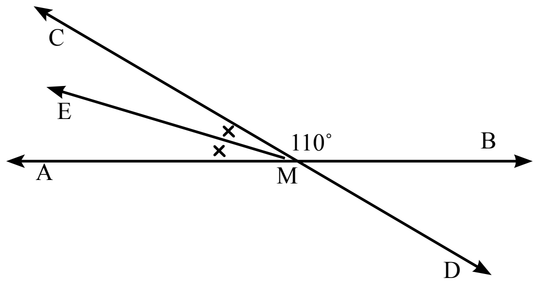

**4** a) Use the geometric tools to draw an angle of measure 60˚.

b) In the oppsite figure,

m (∠ CMB) = 110˚

$\overleftrightarrow{AB} \cap \overleftrightarrow{CD}$ = {M} , $\overline{MC}$ bisects ∠ ABC

and m (∠ AMC), (∠ AME) , m (∠ AMD)

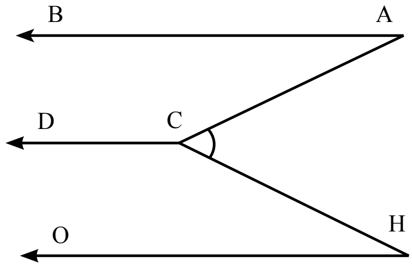



**5** **In the opposite figure:**

$\overline{AB}$ // $\overline{CB}$ // HO, m (∠ A) = 35˚

and m (∠ H) = 40˚

**Find:** 1. m (∠ ACD) 2. m (∠ DCH)
3. m (∠ ACH)



**Answer the following questions:**

## 1 Choose the correct answer

1 ) The supplement of the angle whose measure is 75° is an angle whose measure is ..........

a) 60° b) 180° c) 105° d) 90°

2 ) If $\Delta$ ABC ≡ $\Delta$ XYZ and m(∠ A) + m(∠ Y) = 120°, then m(∠ Z) = ..........

a) 50° b) 60° c) 70° d) 80°

3 ) The sum of measure of the accumulative angles at a point equals..........

a) 180° b) 360 ° c) 630° d) 603°

4 ) If the two straight lines are perpendicular to a third , then the two straight lines are ..........

a) perpendicular b) congruent c) intersecting d) parallel

5 ) A square with perimeter 20 cm , then it's area is .......... $cm^2$

S = P ÷ 4 = 20 ÷ 4 = 5
area = S×S = 5×5 = 25 cm²

a) 4 b) 5 c) 25 d) 400

6 ) The triangle whose perimeter is 12 cm. and the lengths of its two sides are 2 cm. , 5 cm. , is called ..........

a) isosceles b) equilateral c) right d) scalene

## 2 complete the following :

a ) The two diagonals are perpendicular in ...Rhombus... , ...Square...

b ) The perpendicular bisector of a line segment is called axis of symetry.

c ) The two right angled triangles are congruent if ~~equal in measure~~ hybotinies and side

d) If $\angle (A)$ supplements $\angle (B)$ and $\angle (A) \equiv \angle (B)$ then $m \angle (B) =$ 90

e) If $\overline{AB} \equiv \overline{XY}$, then $AB - XY =$ Zero

**3** a) State any two cases of congruency of two triangles.

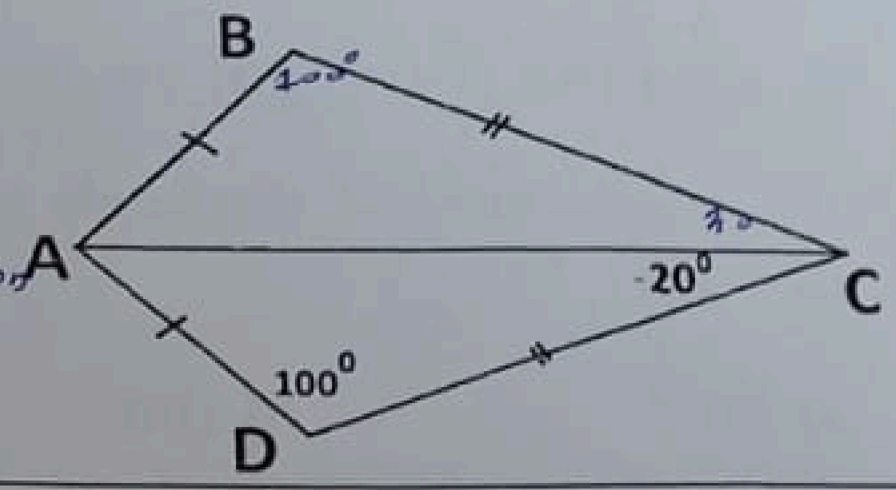
b) Draw a line segment $\overline{AB}$ of length 6 cm, then draw its symmetry axis.

c) In the opposite figure:

1- (BC) = (DC) - 2- (AB) = (AD) -

1) prove that $\Delta ABC \equiv \Delta ADC$ (AC) is a common side

2) find $m(\angle BAC)$ 60°



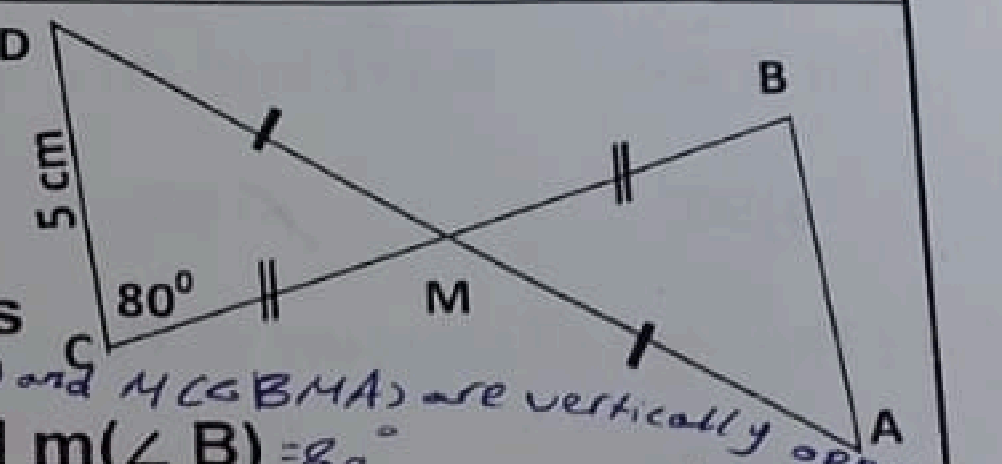

**4** a) In the opposite figure:

$m(\angle C) = 80^0$, $\overline{CB} \cap \overline{AD} = \{M\}$, $MB = MC$

$MD = MA$, $CD = 5$ cm. Mention the conditions

1- (AM) = (DM) - 2- (BM) = (CM) - 3- M(∠DMC) and M(∠BMA) are vertically opposite angle

for $\Delta ABM$, $\Delta DCM$ to be congruent and find $m(\angle B)$ = 80°

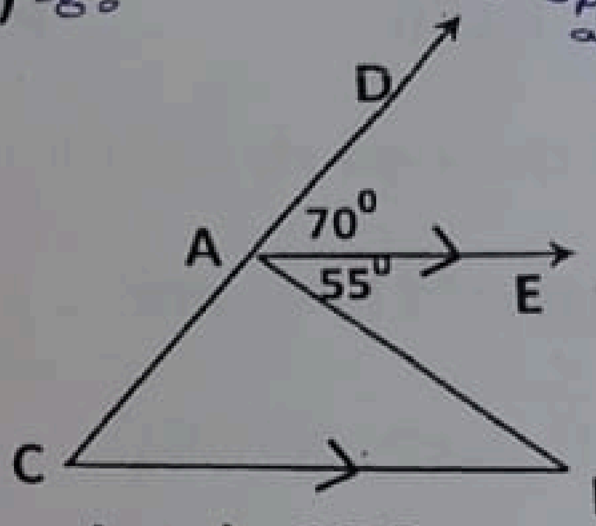



b) In the opposite figure:

ABC is a triangle where the point $A \in \overrightarrow{CD}$

$\overrightarrow{AE} \; // \; \overline{CB}$, $m(\angle DAE) = 70^0$ and

$m(\angle EAB) = 55^0$, Calculate measure of each angle in the triangle ABC

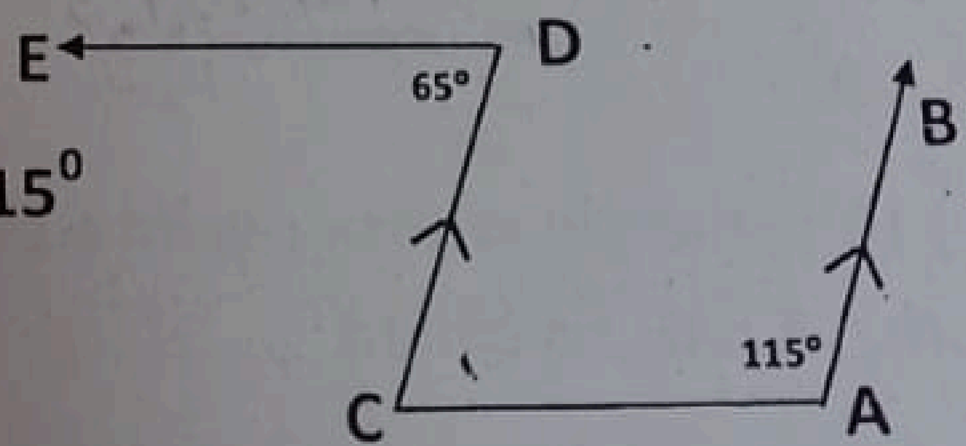



**5** a) In the opposite figure:

If $\overrightarrow{AB} \; // \; \overline{CD}$, $m(\angle D) = 65^0$, $m(\angle A) = 115^0$

Find $m(\angle C)$ = 65

Is $\overline{AC} \; // \; \overrightarrow{DE}$ ? (Give the reason)

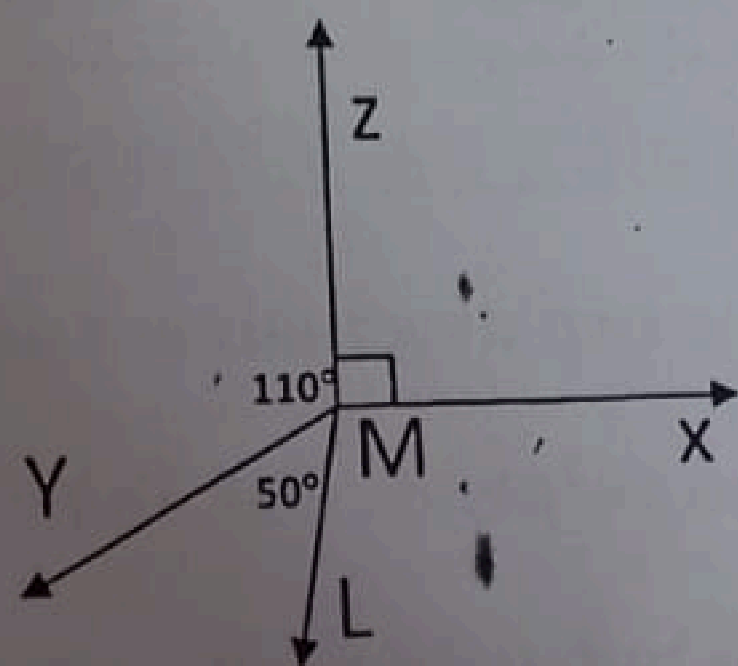



b) In the opposite figure:

$m(\angle ZMY) = 110^0$, $m(\angle XMZ) = 90^0$

$m(\angle YML) = 50^0$

Find by steps $m(\angle XML)$ 110°



AL -Azhar AL - Sharif
Central Administration of Cairo Zone
1st Year Preparatory Exam
First Term 2021 / 2022
Subject : Geometry Time : 1:30 Hours

الأزهر الشريف
الادارة المركزية لمنطقة القاهرة الأزهرية
امتحان النقل من الصف الأول الإعدادي
الفصل الدراسي الأول للعام الدراسي ٢٠٢١ / ٢٠٢٢ م
الهندسة لغات الزمن : ساعة ونصف

**Answer the following questions :** ( 5 marks for each question )

**First question : Choose the correct answer from those given:**

a) The supplement of angle whose measure is 30° = ..... . [ 30 , 60 , 120 , 150]

b) If two straight lines intersect then each two ....... angles have the same measure .
[ corresponding , alternate , vertically opposite , adjacent ]

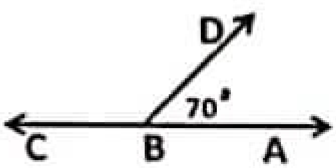
c) The two straight lines that are perpendicular to a third , then the two straight lines are ...... . [ perpendicular , intersecting , parallal , congruent ]

d) The sum of the measure of the accumulative angles at a point = ..........° .
[ 306 , 360 , 180 , 450]

e) If Δ A B C ≡ Δ X Y Z and m ( ∠A ) + m (∠ B ) = 100° ,then m ( ∠ Z ) = ....°
[ 50 , 80 , 90 , 100]

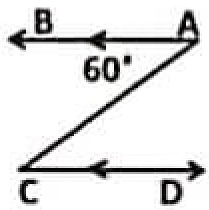
**Second Question : Complete the following :**

a) **In the opposite figure :**



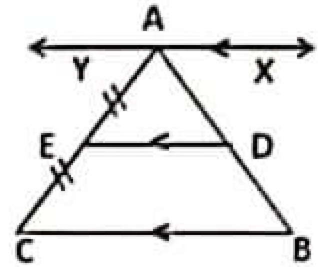

If B ∈ $\overleftrightarrow{AC}$ ,
then m (∠ D B C ) = ......°

b) **In the opposite figure :**




If $\overrightarrow{AB}$ // $\overrightarrow{CD}$ ,
then m ( ∠C ) = ...°

c) **In the opposite figure :**




$\overleftrightarrow{XY}$ // $\overline{DE}$ // $\overline{BC}$ , A E = E C,
then A D : A B = .... : ....

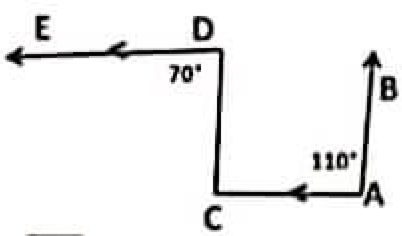
d) The perpendicular bisector of a line segment is called

e) If Δ A B C ≡ Δ D E O , then A C = ....... .



**Third Question :**

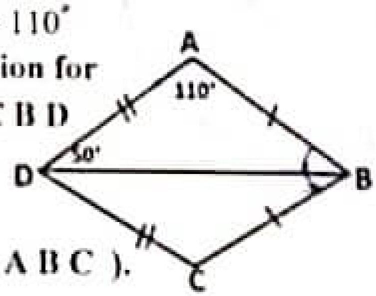
a) **In the opposite figure :**




If $\overrightarrow{DE}$ // $\overline{AC}$ , m ( ∠ A ) = 110° ,
m (∠ D ) = 70°
Find : m (∠ C ) , is $\overleftrightarrow{AB}$ // $\overline{CD}$ ?

b) **In the opposite figure :**

If A B = P C , A D = D C
m (∠ A D B ) = 50°
m (∠ B A D ) = 110°
Write the condition for
Δ A B D ≡ Δ C B D




, then find m (∠ A B C ).

CAIRO EDUCATIONAL ZONE
MATHEMATICS SUPERVISION FOR G. & D. L. S.
FIRST TERM EXAM FOR FIRST FORM PREP.
الصف الأول الاعدادى رياضيات (هندسة)

TIME ALLOWED : 2 HOURS
MATHS (GEOMETRY)
امتحان الفصل الدراسي الأول يناير ٢٠٢٠

## Answer the following question (أسئلة الامتحان في صفحتين)

**1) Choose the correct answer :**

a) The sum of the measures of the accumulative angles at a point is ..........

[$45^\circ$ or $90^\circ$ or $180^\circ$ or $360^\circ$]

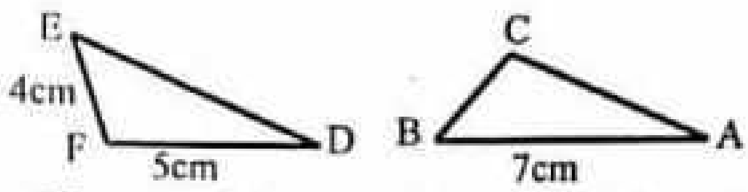
b) If $\triangle ABC \equiv \triangle DEF$ , $m(\angle B) + m(\angle C) = 100^\circ$ , then $m(\angle D) =$ ...........

[$50^\circ$ or $80^\circ$ or $260^\circ$ or $100^\circ$]

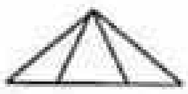
c) the angle whose measure $100^\circ$ , its type is ........... [acute or obtuse or right or reflex]

d) In the opposite figure:

If $\triangle ABC \equiv \triangle DEF$ ,
then the perimeter of $\triangle ABC =$ ..........




[9cm or 11cm or 12cm or 16cm]

e) The number of triangles in the figure  equals .......... [3 or 5 or 6 or 7]

f) The measure of each of the two equal supplementary angles ..........

[$180^\circ$ or $45^\circ$ or $360^\circ$ or $90^\circ$]

**2) Complete :**

a) If $m(\angle A) = 105^\circ$, then m (reflex $\angle A$) = ..........°

b) If a straight line intersects two parallel straight lines, then each two corresponding angles are ...................

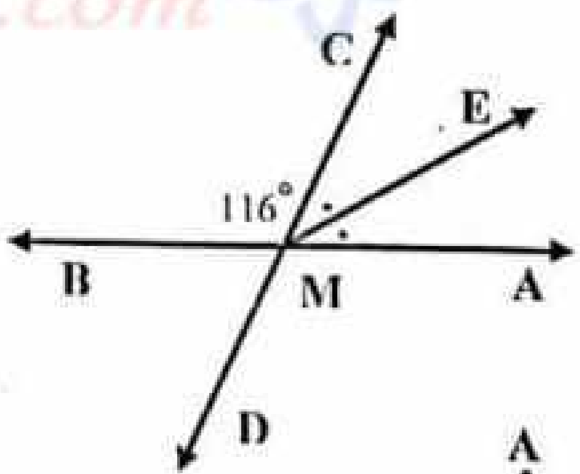
c) If the side length of a square is 5 cm then its area = ........

d) Two triangles are congruent if two sides and the ........ of one triangle are congruent to the corresponding parts of the other triangle.

e) If two straight lines are parallel to a third straight line, then these two straight lines are ...................

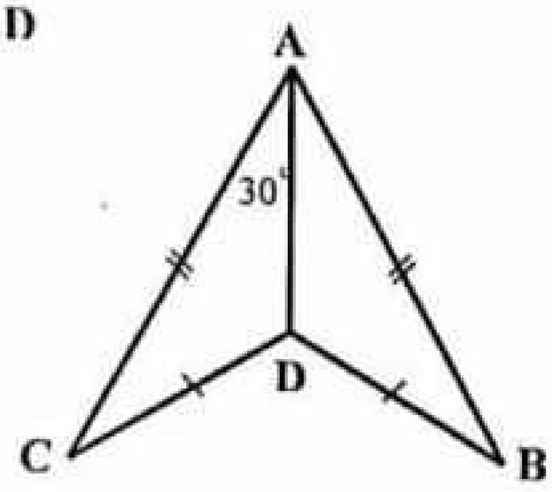
**3) a) In the opposite figure :**

M is the point of intersection of $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$, $\overrightarrow{ME}$ bisects $\angle AMC$, and $m(\angle BMC) = 116^\circ$.
Find: $m(\angle AME)$, $m(\angle AMD)$.




**b) In the opposite figure :**

AB = AC , BD = CD
$m(\angle CAD) = 30^\circ$
Prove that $\triangle ABD \equiv \triangle ACD$
then find $m(\angle BAC)$.

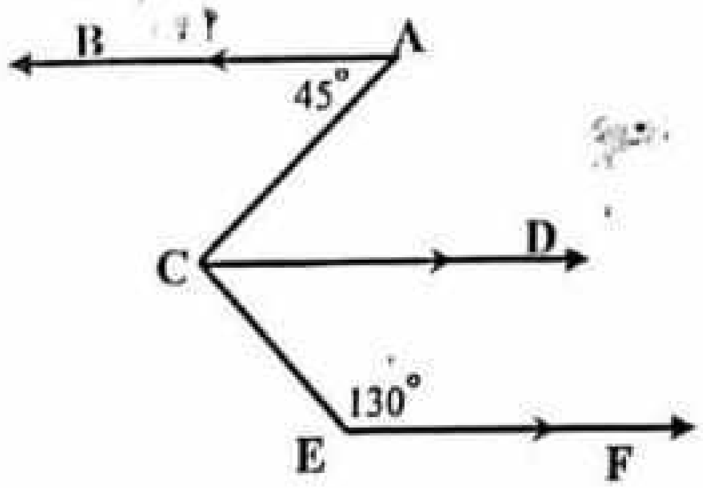


4)a) In the opposite figure :

$\overrightarrow{AB} \parallel \overrightarrow{CD} \parallel \overrightarrow{EF}$,

$m(\angle A) = 45^\circ$ , $m(\angle E) = 130^\circ$

Find : $m(\angle ACE)$




b) Using the geometric instruments , draw $\angle ABC$ of measure $110^\circ$ , then draw $\overrightarrow{BF}$ to bisect the angle . (Don't remove the arcs)

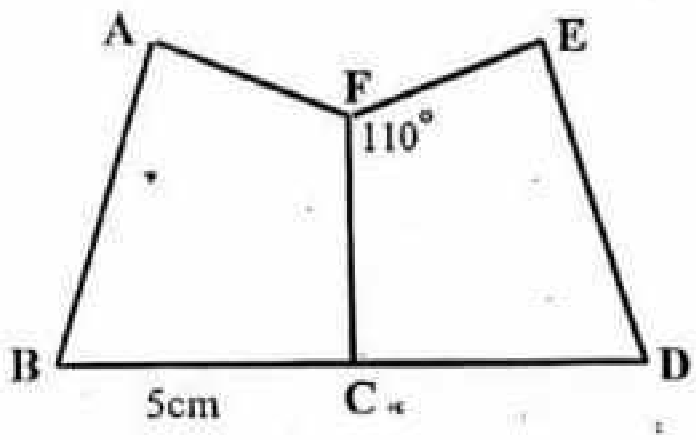
5)a) In the opposite figure :

The polygon ABCF ≡ The polygon EDCF ,

$m(\angle EFC) = 110^\circ$ , BC = 5 cm

Find :

$m(\angle AFC)$ , $m(\angle AFE)$ and the length of $\overline{BD}$



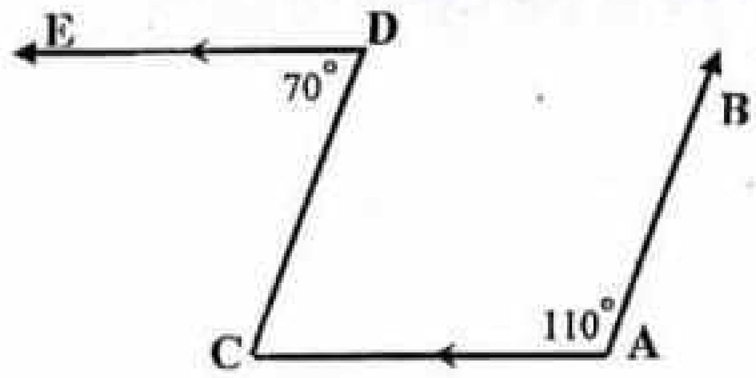

b) In the opposite figure :

$\overrightarrow{DE} \parallel \overline{AC}$,

$m(\angle D) = 70^\circ$ , $m(\angle A) = 110^\circ$

Find : $m(\angle C)$

Prove that : $\overrightarrow{AB} \parallel \overline{CD}$






انتهت الأسئلة

GOOD LUCK

## First PREP. Exam Geo. First term

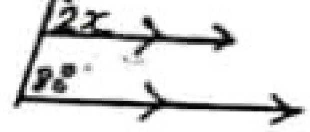
Time :

1) choose the correct answer :

1- the two diagonals are perpendicular and equal in length in the ........ [ rectangle , rhombus , square ,triangle]

2- the sum of measures of the accumulative angles at point is ........ [ 360° , 270° , 180° , 90° ]

3- from the opposite figure x = ....° [20,30,40,80]




4- if < x ≡ < y , < x ,< y are complemntry angles, then m (<y) = ........ [45°, 90°, 180°, 360°]

5- if △ ABC ≡ △ XYZ and m (< x )+ m (< z) = 130° then m (< B) =........[30° , 45° , 50° , 90° ]

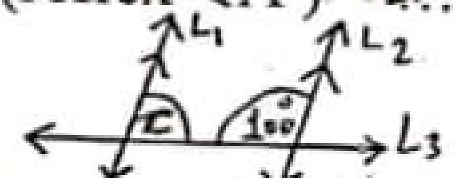
6- the acute angle supplements ........angle [ aright , an obtuse , an acute , zero]

2) complete :

1- if m (<A) =115° then m (reflex <A ) =245

2- in the opposite figure :

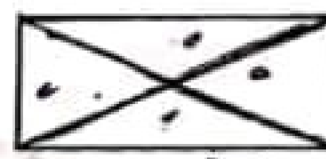
$L_1 // L_2$ , then x= 80°




3- if △ABC ≡ △XYZ , then AB = XY

4- the . measure of straight angle is 180°

5- the number of triangles in the opposite figure equals 8



3) ⓐ in the opposite figure : $\overleftrightarrow{AC} \cap \overleftrightarrow{DE}$ = {B} , m (<ABD) =50°

$\overrightarrow{BF}$ bisect <ABE find :

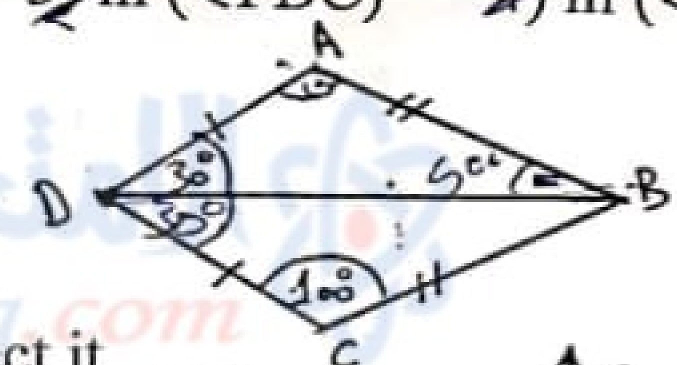



1) m (<DBC) 2) m (<ABE) 3) m (<FBC) 4) m (<DBF)

ⓑ from the opposite figure :

is △ABD ≡ △CBD ( give reason )

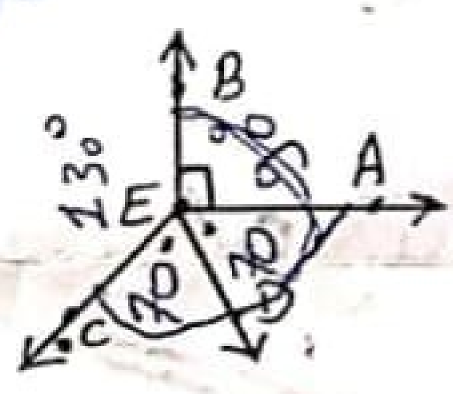
Then fined : m (<ABD)




4) ⓐ Draw < ABC of measure 100° and bisect it

ⓑ In the opposite figure m (< BEC) = 130° , $\overrightarrow{EB} \perp \overrightarrow{EA}$ and $\overrightarrow{ED}$ bisect < AEC

find : 1) m (<AEC) 2) m (<BED)

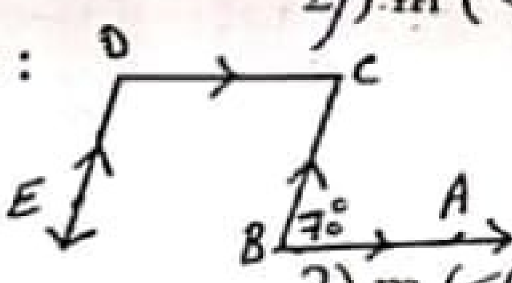



5) ⓐ in the opposite figure :

$\overline{BA} // \overline{DC}$ , $\overline{DE} // \overline{CB}$ ad

M (<ABC) = 70°

Find ; 1) m (<BCD) 2) m (<CDE)



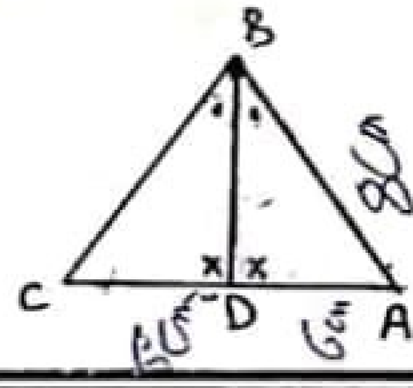

ⓑ in the opposite figure :

$\overrightarrow{BD}$ bisect < ABC, m (< ADB) = m (ADC)

AB = 8 cm , CD = 6 cm

1 ) is ABD ≡ CBD ? why ?

2 ) find : CB and AD (by steps)

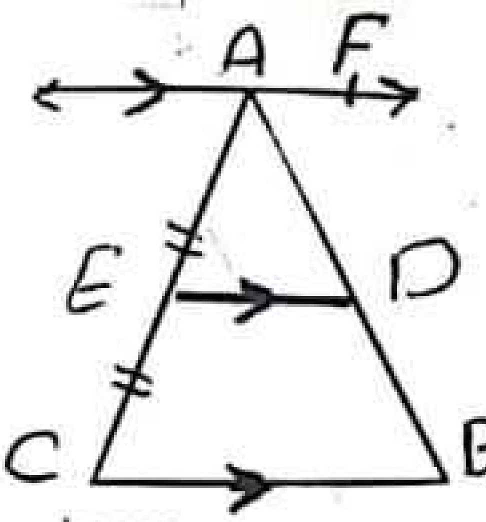



Good Luck

| Subject: Goemtry The First grade preparatory Time: 2hour | Midterm Exam of the First grade preparatory | Youssef Elsebaei School languages |
|---|---|---|

sama

## 1-choose the correct answer:




1)In the opposite figure : $\overleftrightarrow{AF} \parallel \overleftrightarrow{DE} \parallel \overleftrightarrow{CB}$, AE=EC, then

AD:AB=……:…… (2:1, 3:2, 1:3, 1:2)

2)If two Straight lines intersect, then each two……..angles have the same measures. (adjacent, alternate, corresponding, vertically opposite)



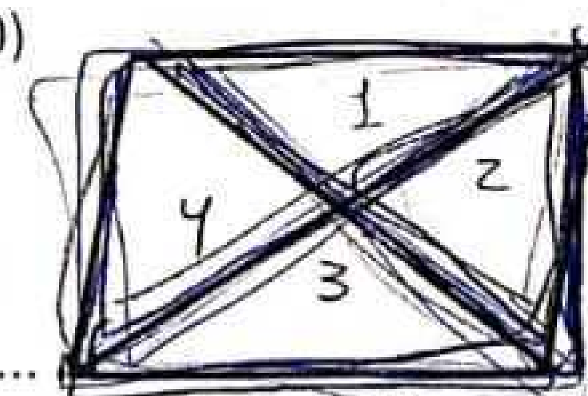
3)The two adjacent angle formed by intersecting a straight line and ray are …….( Complementary, supplementary, parallel, equals )

4)The axis of symmetry of a line segment is ……………(parallel to it, equal to it, perpendicular from its midpoint, congruent to it)

5) If $\triangle ABC \equiv \triangle XYZ$, then BC =…………….(AB, XY, XZ, YZ)

6)IF the ratio between two supplementary angles is 7: 13 then the measure of the smaller angle is ………..degree.( 70, 60, 63, 50)

## 2-Complete the following:

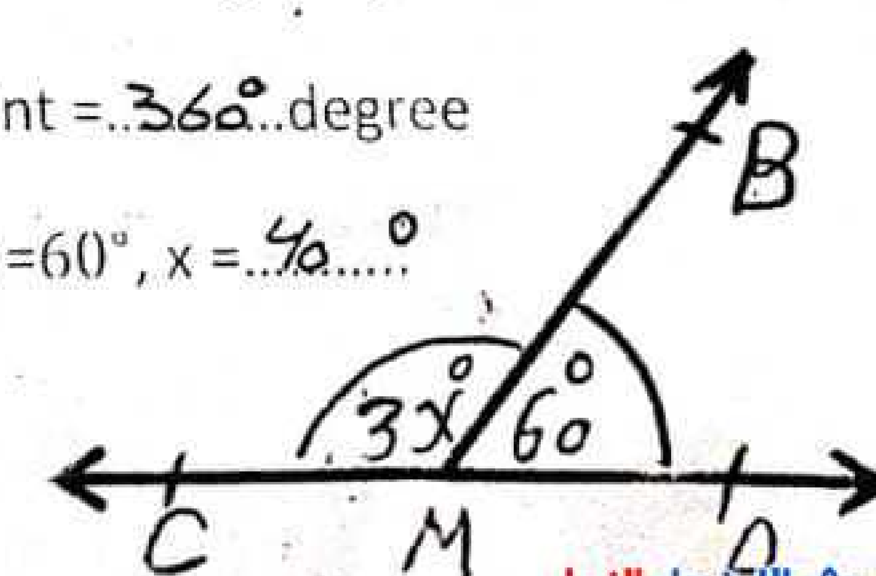



1) The number of triangles in the opposite figure equals ..8………

2) The two straight lines that are perpendicular to a third, then the two straight are..equal in measure..

3) If $< x$ complementary $< y$, $m(< y) = m(< x)$, then the $m(< x)$ =.90÷2=.45.

4)The of the measure of the accumulative angle at point =..360°..degree




5) The opposite figure . If $\overrightarrow{MB} \cap \overleftrightarrow{AC} = \{M\}$, m(< AMB )=60°, x =..40….°

180-60=120÷3=40°

1st: S.A.S = Two sides and Included angle
2nd: A.S.A = Two sides are equal in ... and one angle is equal in Length

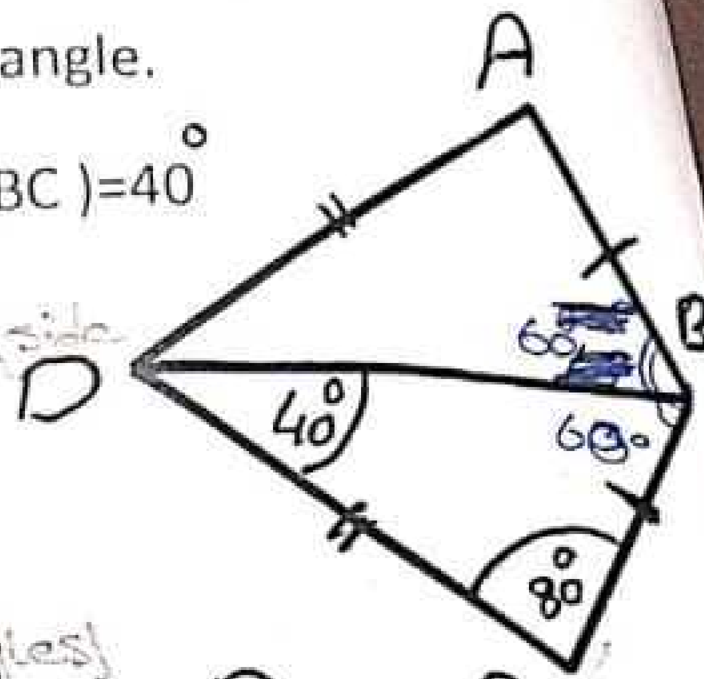
Q3) a) Mention two cases of congruency of two triangle.

b) I n the opposite figure AB = BC ,AD =CD,m(∠ ABC )=40°

prove that △ CBD ≡ △ ABD

And find m( < ABD).

m(∠ABD) = 180° − (80 + 40) = 60° + 60° = 120
m(∠ABD) = 120




Q4) a) In the opposite figure $\overrightarrow{DE} \parallel \overline{AC}$,

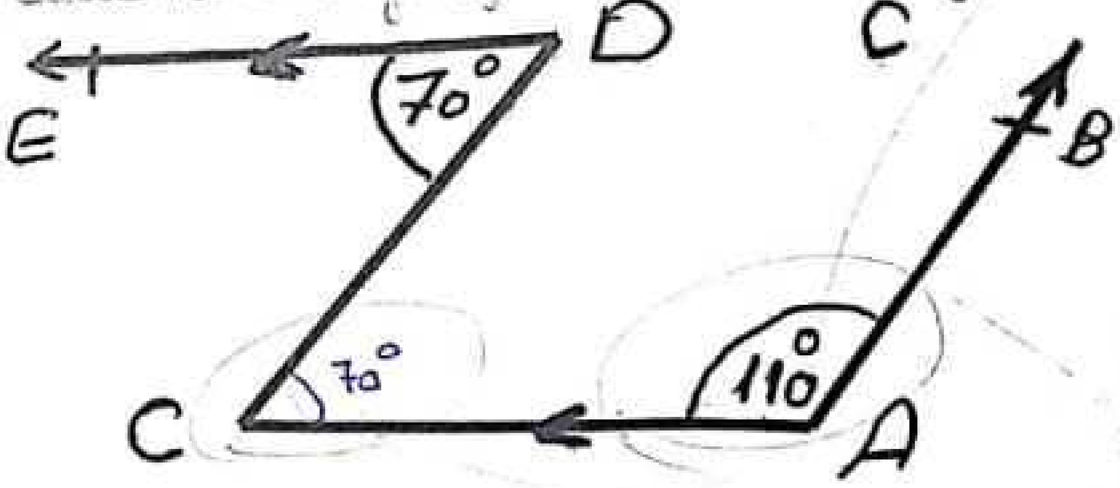
m( <A ) =110

m(< D ) =70

Find m(< C) .Is $\overrightarrow{AB} \parallel \overline{CD}$ ?

Given the reason.

m(∠DCA) = m(∠C) = 70° (alternative angles)
yes, AB // CD



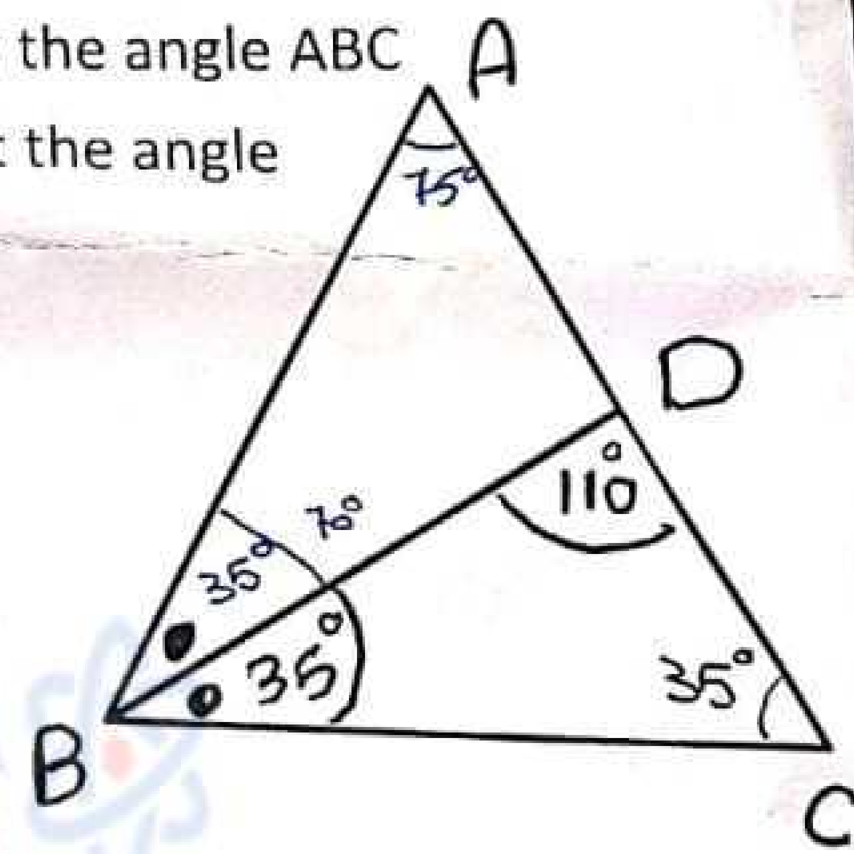

b) By using the ruler and the compasses draw the angle ABC where ,m (∠ B) = 60° and draw $\overrightarrow{BD}$ to bisect the angle

(Do not remove the arcs )

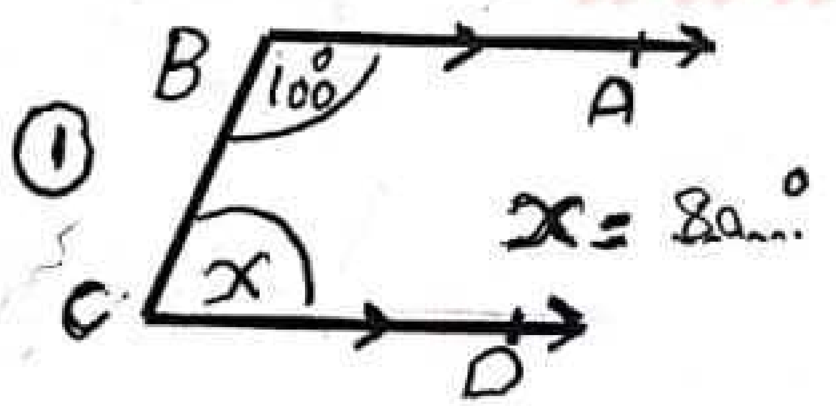
Q5)In the opposite figure BD bisects ∠ ABC, m(∠ BDC) = 110°, m( ∠DBC) = 35°

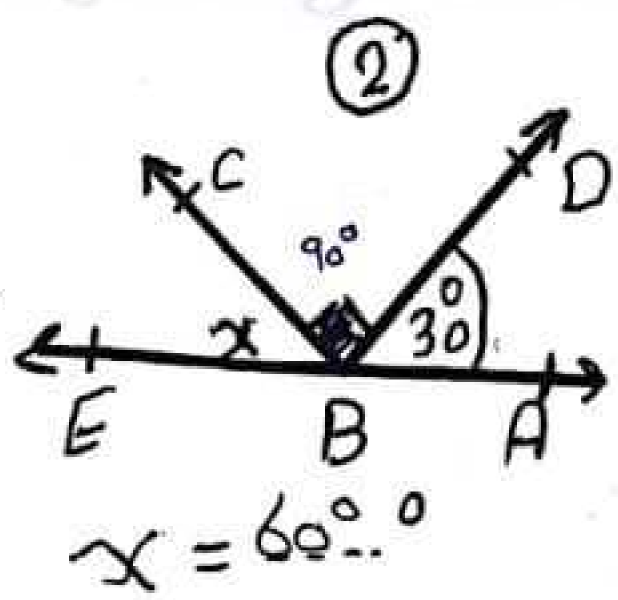
Find the m (∠A). With degrees.

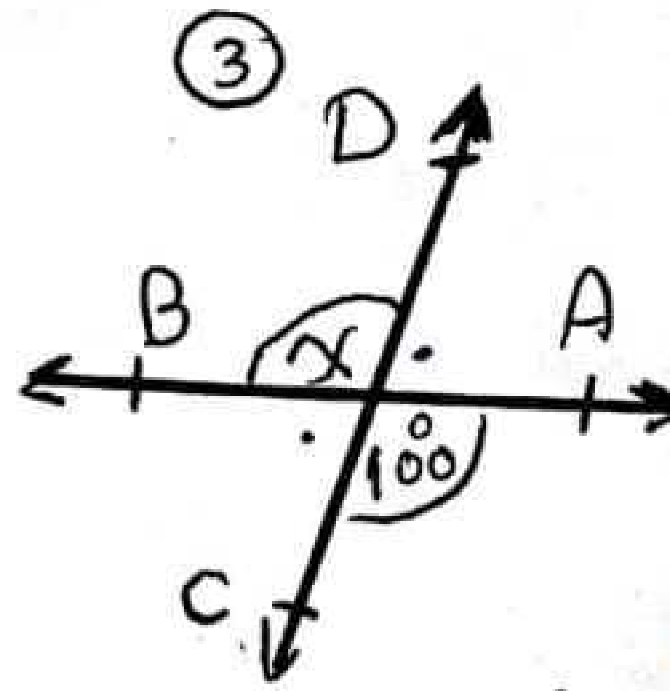
m(∠DCB) = 180 − (35 + 110) = 35
m(∠A) = 180 − (35 + 70) = 75°
m(∠A) = 75°

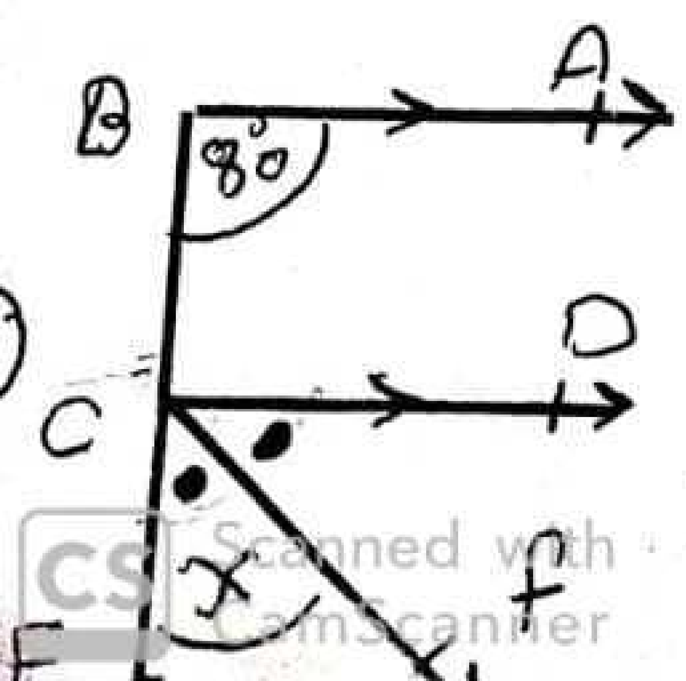



b)In all figures find the value of x



| Cairo Governorate<br>El Nozha Educational Zone<br>supervision for mathematics | First Term Exam<br>2019/2020 | Subject: Geometry<br>Form: 1st Prep.<br>Time: 2 H |
|---|---|---|

**Question** (1) *Choose the correct answer :*

(1) The sum of the measures of two adjacent angles formed by a straight line and a ray is ..........° (360 , 180 , 90 , 60 )

(2) If m (∠B) = 150° , then the m (reflex ∠B ) = .....° ( 90 , 180 , 210 , 360 )

(3) The axis of symmetry of the line segment is ............... to it.

(equal , congruency, parallel , perpendicular bisector)

(4) If Δ ABD ≡ Δ $xyl$ then $\overline{yl}$ ≡ ··· ( $\overline{AB}$ , $\overline{xy}$ , $\overline{BD}$ , $\overline{AD}$ )

(5) The angle whose measure is 37° complements an angle of measure ..........°

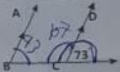
(37 , 53 , 63 , 143 )

(6) The angle whose is greater than 90° but less than 180° is called ........

(acute, obtuse, straight, reflected )

**Question** (2) *Complete the following :*

(1) In the opposite figure:




$\overrightarrow{BA}$ // $\overrightarrow{CD}$ , $\overrightarrow{BC}$ bisects , ∴ m∠(B) = .....°

(2) The two triangles are congruent if two sides and .......... are congruent with their corresponding in the other triangle.

(3) If m(∠A) ≡ m(∠B) , and A , B are supplementary angles, then m(∠B)=.....

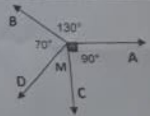
(4) If a straight line intersects two parallel straight lines, then every two alternate angles ..........

(5) In the opposite figure :




The two angles AMH , CMB are called ..........

**Question** (3): a) In the opposite figure:




m(∠ AMB)=130°, m(∠ DMB)=70°,

m(∠ AMC)=90°, Find m(∠ DMC)

b) In the opposite figure:




m(∠BAC)=40° , $\overrightarrow{CE}$ bisects ∠ ACD,

m(∠DCE)=20°

Prove : $\overrightarrow{AB}$ // $\overrightarrow{CD}$

بقية الأسئلة خلف الورقة

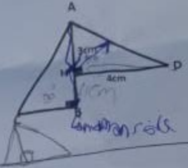
**Question (4):**

a) Draw $\angle ABC$ where $m(\angle ABC) = 120^\circ$, using the ruler and the compasses bisect $\angle B$ by $\overrightarrow{BD}$ (Don't remove the arcs)

b) In the opposite figure:

$\triangle ABC \equiv \triangle DHA$, AH = 3cm, HD= 4cm

Find the length of $\overline{CB}$, $\overline{HB}$




**Question (5):**

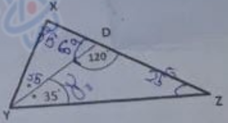
a) Mention two cases of congruency of two triangles.

b) In the opposite figure:

$\overrightarrow{DY}$ bisects $\angle XYZ$, m $(\angle DYZ)=35^\circ$,

m $(\angle YDZ) = 120^\circ$.

Find m $(\angle X)$




Good Luck

Stage : First Prep.

Subject : Geometry

Time : Two hours

**Mid- year Exam**

## 1) Choose :

1) The angle whose measure is more than $90^\circ$ and less than $180^\circ$ is ............

a) acute b) right c) obtuse d) zero

2) The supplement of the angle whose measure $30^\circ$= ....

a) $60^\circ$ b) $150^\circ$ c) $180^\circ$ d) $90^\circ$

3) The sum of measure of the accumulative angles at a point = ..........

a) $30^\circ$ b) $90^\circ$ c) $180^\circ$ d) $360^\circ$

4) If two straight lines are parallel to a third straight line, then these two straight lines are ..........

a) parallel b) perpendicular c) intersected d) orthogonal

5) If m ($\angle$A) ≡ m ($\angle$B), $\angle$A complements $\angle$B, then m ($\angle$A)= ..............

a) $15^\circ$ b) $30^\circ$ c) $45^\circ$ d) $60^\circ$

6) If $\Delta ABC \equiv \Delta XYZ$, then AC = ..........

a) XY b) XZ c) YZ d) AB

## 2) Complete :

1) The measure of the straight angle equals ............

2) If two straight lines intersect , then each two vertically opposite angles are ..............

3) If m ($\angle$A) = $100^\circ$, then m (reflex $\angle$A)= ............ °

4) The complement of an angle of measure $50^\circ$ is .......... °

5) The two a djacent angles formed by intersecting a straight line and a ray are ............

Giza Governorate
Al Haram Educational Directorate
Supervision of Mathematics

(2019/2020)

**3) a] Mention two cases of congruency of two triangles**

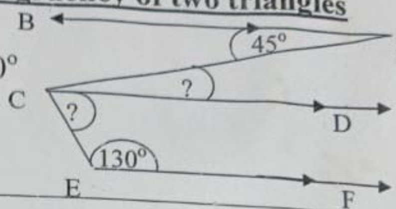
b] If $\overline{AB} \parallel \overline{DC} \parallel \overline{EF}$

and m ($\angle$A) = 45°, m ($\angle$E) = 130°

Find 1) m ($\angle$ ACD)

2) m ($\angle$ DCE)

(with steps)



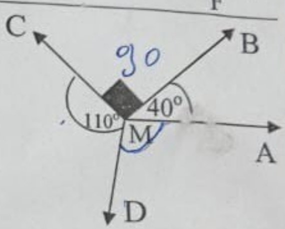

**4) a] In the given figure :**

m ($\angle$AMB) = 40°, m ($\angle$BMC) = 90°,

m ($\angle$CMD) = 110°

Find : m ($\angle$AMD)

(with steps)



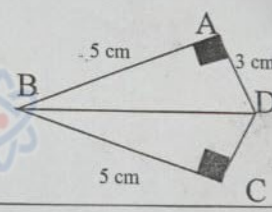

**b] In the given figure :**

If m ($\angle$ BAD) = m ($\angle$BCD) = 90°

, AB = CB = 5cm

1) Are $\Delta$ BAD $\equiv$ $\Delta$ BCD ? Give reason

2) Find the length of $\overline{CD}$



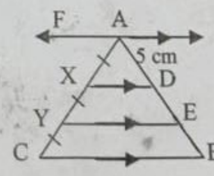



**5) a) In the given figure :**

$\overleftrightarrow{AF} \parallel \overleftrightarrow{DX} \parallel \overleftrightarrow{Ey} / \overleftrightarrow{BC}$,

AX = XY = YC and AD = 5 cm

**Find the length of $\overline{DE}$ and $\overline{AB}$**




b) Draw < ABC where m (<B) = 80°, using the ruler and the compasses bisect $\angle$B by $\overrightarrow{BD}$ (don't remove the arcs )

Alya yousry

Alexandria governorate

East Educational Zone

Helalia Language School

Geometry middle (1)

Time Allowed ( 2 hours )

Midyear Exam 2019-2020

## 1- Complete:

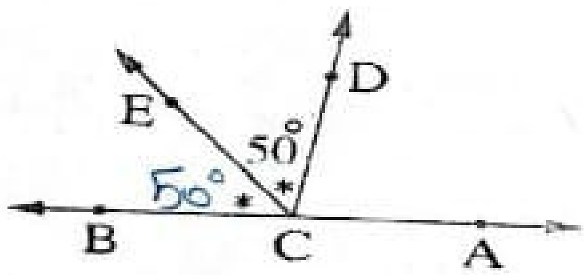
a) If $L_1$ // $L_2$ and $L_1 \perp L_3$, then $L_3$ ........... $L_2$.

b) If $(< A)$ =160° then m(reflex$< A$) = _____ °

c) If ∠A supplements ∠B and ∠A ≡ ∠B , then m (∠B) = ______ °

d) The two complement angles are the two angles whose sum of their measures is ______

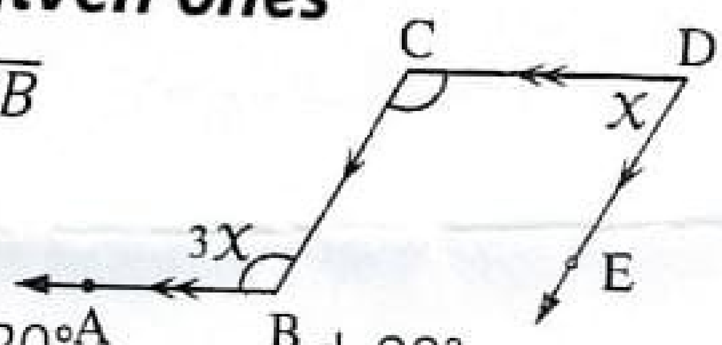
e) In the opposite figure $m(< ECA)$ = _____ °




## 2 Choose the correct answer from the given ones

1- *in the opposite figure*: $\overline{CD}$ // $\overrightarrow{BA}$ , $\overline{DE}$ // $\overline{CB}$

then : x = .............




a. 60° b. 45° c. 120° d. 90°

2- If $\Delta ABC \equiv \Delta XYZ$ , $m(< A) + m(< B) = 100^o$, *then* $m(< Z)$ = ______ °

a. 30 b. 50 c. 80 d. 70

3- If the ratio between the measures of two supplementary angles is 5 : 13 , then the measure of the smaller angle is _____ °

a. 50 b. 130 c. 150 d. 180

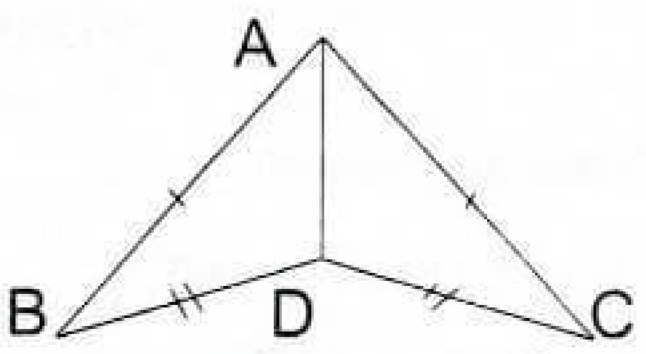
4- The angle of measure 179° is ______ angle.

a. acute b. *right* c. *obtuse* d. *straight*.

5- $\overline{XY}$ ______ $\overleftrightarrow{XY}$

b. ∈ b. ∉ c. ⊂ d. ⊄

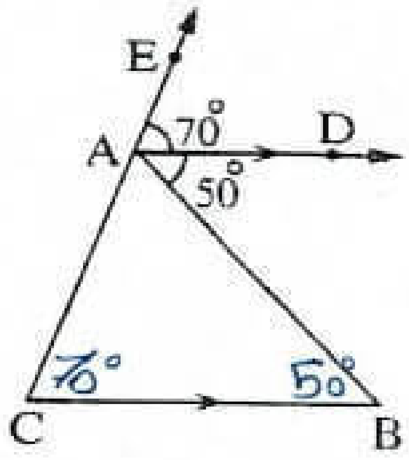
**3- a) In the opposite figure:**




AC = AB , DC = DB

Is $\Delta\, ADB \equiv \Delta\, ADC$ ? *why*

**b) In the opposite figure:**

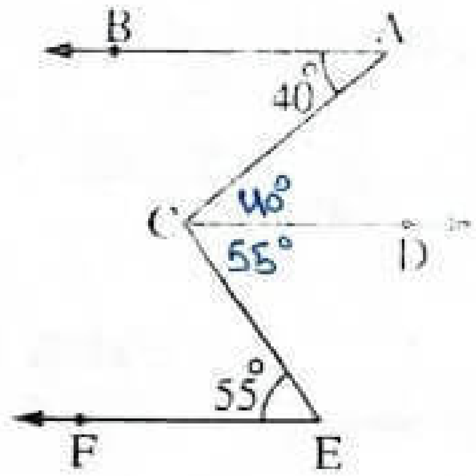



$\overrightarrow{AD} \parallel \overrightarrow{BC}$ , $E \in \overrightarrow{CA}$

m (∠DAE) = 70° and m (∠DAB) = 50°

Find the measures of each angles the triangle ABC

**4-a) In the opposite figure:**




m (∠A) = 40° , m (∠E) = 55°

$\overrightarrow{AB} \parallel \overrightarrow{EF}$ and $\overrightarrow{AB} \parallel \overrightarrow{CD}$

Find: m (∠ACE)

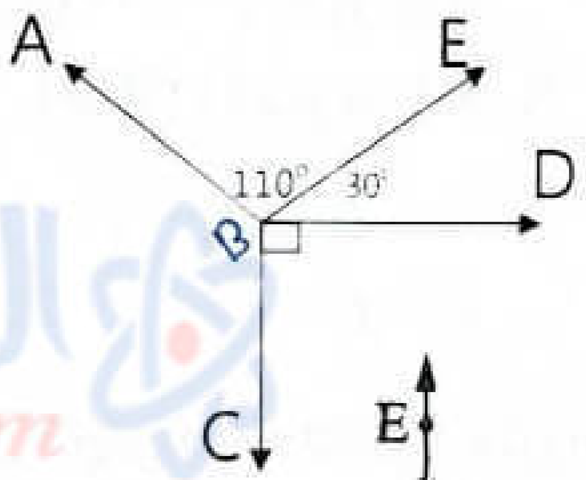
**b)** In the opposite figure:

m( < DBE ) = 30°

<CBD is right angle

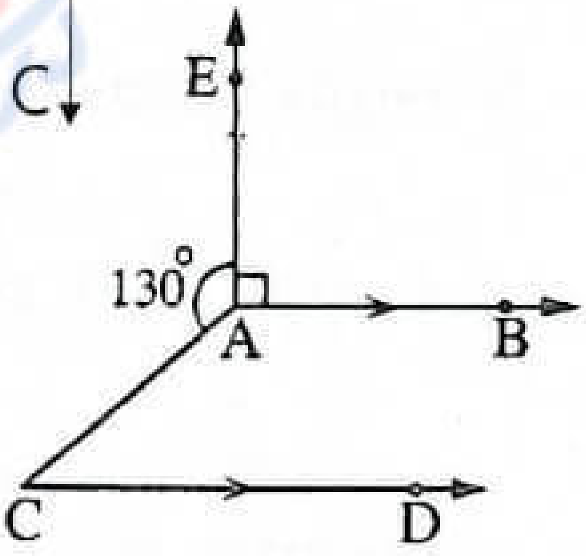
,m( < EBA ) = 110°

Find : m(< ABC )






**5) a- In the opposite figure:**




$\overrightarrow{AB} \parallel \overrightarrow{CD}$ , m(<EAC) = 130° and m(<EAB) = 90°

Then find m(<C)

b- Using the ruler and the compasses , draw Δ ABC in which AB = AC = 5 cm. , BC = 8 cm. ,then draw $\overrightarrow{AD}$ $\perp \overline{BC}$ *to cut* $\overline{BC}$ *at D.*

Find the length of AD. (don't remove the arcs)

Directorate of Education
Administration of Distinguished & Governmental Language Schools

Subject : Geometry
Grade : 1st Prep
Time: 2 hours

**First Term Exam 2019/ 2020**

Answer the following questions

( The exam in two papers)

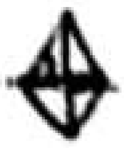
الورقة الأولى

((Allowed to use a calculator ))

**Q1 :Choose the correct answer :**

1) If polygon ABCD ≡ polygon XYZL, then AD = ....

a) XY b) YZ c) LZ d) XL

2) The diagonals are perpendicular in  ....

a) Parallelogram b) rhombus c) rectangle d) trapezium

3) $\overrightarrow{AB} \cup \overrightarrow{AC}$ = ................

a) $\overrightarrow{AB}$ b) $\overline{AB}$ c) ∠ BAC d) Ø

4) If m(∠ X ) = 2 m(∠ Y ) , ∠ X and ∠ Y are two complementary angles ,
Then m(∠ Y ) = .........



a) 30° b)45° c) 60° d) 90°

5) The number of triangles in the figure  equals ............

a) 4 b) 6 c) 7 d) 8

6) If two straight lines are parallel to a third straight line, then these two straight lines are ............

a) perpendicular b) parallel c) congruent d) intersecting

**Q2: Complete each of the following :**

1) If Δ ABC ≡ Δ XYZ, m (∠ X ) = 40° , m (∠ C) = 60°, then m (∠ Y) = 80....°

2) If the perimeter of an equilateral triangle is 36 cm, then its side length is.12..cm

3) The perpendicular bisector of a line segment is called..axis of symmetry

4) If two straight lines intersect ,then each two vertically opposite angles are equal in measure

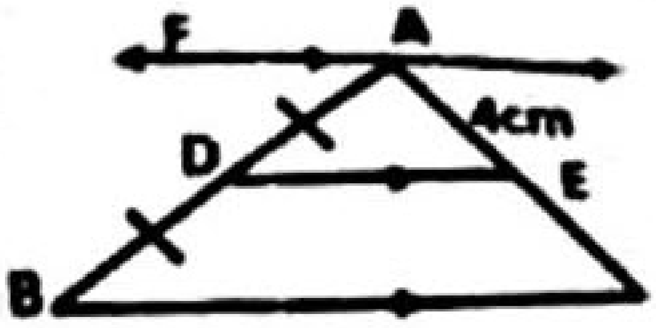
5) The two right –angled triangles are congruent if the..hypotenuse............ and a side of one triangle are congruent to the corresponding element in the other triangle.

بقية الأسئلة فى الورقة الثانية

Q3 [a] In the opposite figure:
m(∠AMB) = 60°, m(∠AMD) = 90°, m(∠BMC) = 110°,
Find m(∠CMD) 360 − (60 + 90° + 110) = 360° − 260° = 100



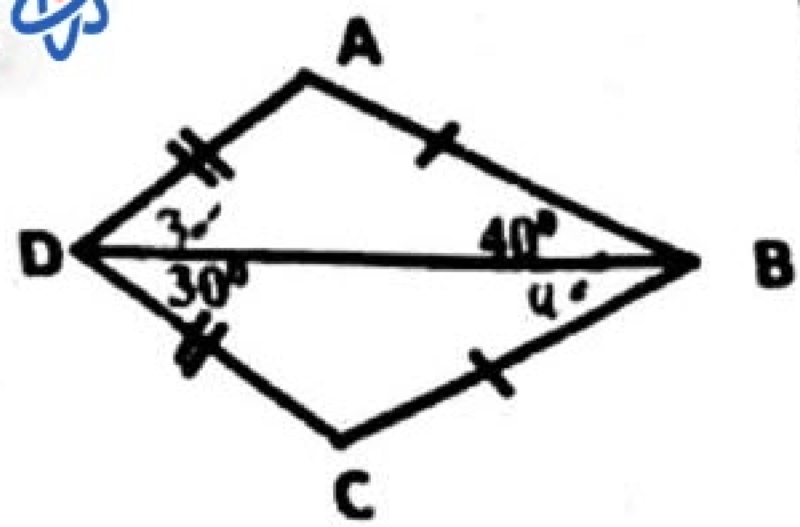
[b] In the opposite figure:
AF // DE // BC,
AD = DB, AE = 4cm
Find the length $\overline{AC}$ ( Give reason )



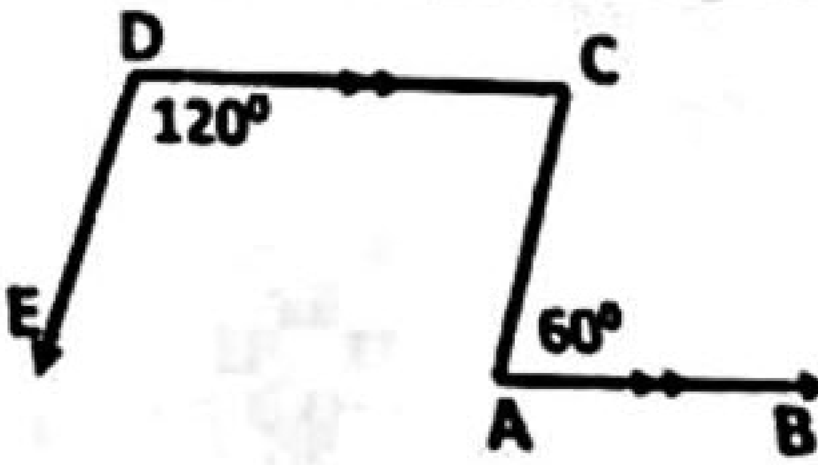

Q4 [a] By using you geometric instrument draw the triangle ABC where
AB = 3cm , BC = 4cm , AC = 5cm , then bisect ∠ B . ( Don't remove the arcs )



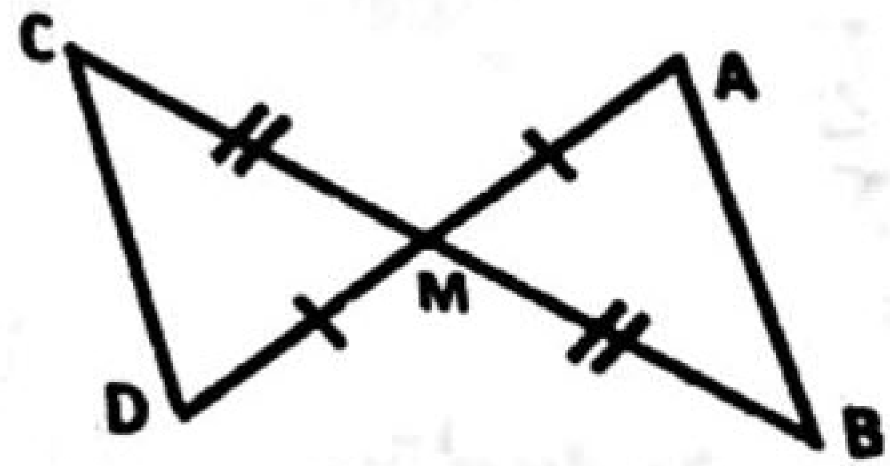
[b] In the figure opposite:
AB = CB , AD = CD
, m( ∠ ABD) = 40° , m(∠ CDB) = 30°
(1) Is Δ ABD ≡ Δ CBD ? Why?
(2) find m( ∠ A)




Q5 [a] In the figure opposite :
$\overrightarrow{AB}$ // $\overline{DC}$ , m(∠A) = 60° , m(∠D) = 120°
1) Find m(∠ C)        2) Is $\overline{AC}$ // $\overrightarrow{DE}$ ? why ?




[b] In the figure opposite :
$\overline{AD}$ ∩ $\overline{BC}$ = { M }
BM = MC , AM = MD
S.A.S
Write the conditions for Δ AMB , Δ DMC
To be congruent ?




انتهت الاسئلة

**With my Best wishes**

Beni –suef governorate
Directorate of official language school
Education administration

subject : geometry
prep. : First form
time : 2 hours

First term exam 2018 / 2019

**First question:** Choose the correct answer.

1) In the opposite figure:

If $A \in \overleftrightarrow{BC}$ and $m(\angle CAD) = 120^\circ$

then $m(\angle BAD) = ......^\circ$




a) $30^\circ$ b) $60^\circ$ c) $90^\circ$ d) $120^\circ$

2) If $m(\angle A) = 90^\circ$ , then $m(\text{reflex} \angle A) = ......^\circ$

a) $0^\circ$ b) $90^\circ$ c) $180^\circ$ d) $270^\circ$

3) If $\Delta ABC \equiv \Delta XYZ$ , then AB = ..........

a) BC b) YZ c) XZ d) XY

4) In $\Delta ABC$ , if $m(\angle A) + m(\angle B) = 130^\circ$ , then $m(\angle C) = ......^\circ$

a) $40^\circ$ b) $50^\circ$ c) $65^\circ$ d) $130^\circ$

5) The angle whose measure is more than $90^\circ$ and less than $180^\circ$ is called ...... angle

a) an acute b) a right c) an obtuse d) a reflex

6) The number of triangles in the figure  equals ..........

a) 4 b) 6 c) 7 d) 8

**Second question:** Complete:

1) The angle whose measure is $50^\circ$ complements an angle of measure ......... and supplements an angle of measure ..........

2) If the polygon ABCD ≡ the polygon XYZL , then $\overline{DA} \equiv$ ......... , $m(\angle BCD) = m(\angle ......)$

3) Two triangles are congruent if each ............ of one triangle is congruent to the corresponding ............ of the other triangle

4) The straight line that is perpendicular to one of two parallel lines is ......... to the other

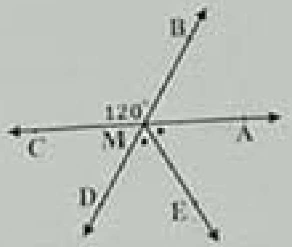
5) The perpendicular bisector of a line segment is called ..........

Seba mohamed

**Third question:** a) Using the geometric instruments , Draw $\Delta ABC$ in which $AB = AC = 4$ cm. , $BC = 5$ cm. ,then bisect $\angle B$ by a bisector $\overrightarrow{BD}$ where $D \in \overline{AC}$

( Don't remove the arcs)

b) In the opposite figure:




M is the point of intersection of $\overleftrightarrow{AC}$ and $\overleftrightarrow{BD}$

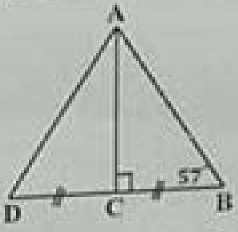
, $\overrightarrow{ME}$ bisects $\angle AMD$ and $m(\angle BMC) = 120°$

Find: $m(\angle AMD)$ and $m(\angle EMD)$ ( give reason )

---

**Fourth question:**

a) In the opposite figure:

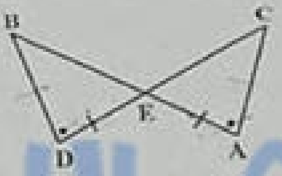



$CB = CD$ , $\overline{AC} \perp \overline{BD}$ , $AB = 5$ cm.

and $m(\angle B) = 57°$

Study the case of congruency , then deduce $m(\angle ADC)$ , the length of $\overline{AD}$

b) In the opposite figure:




$\overline{AB} \cap \overline{CD} = \{E\}$ , $AE = ED$

and $m(\angle A) = m(\angle D)$

mention the conditions for $\Delta ACE$ , $\Delta DBE$ to be congruent

---

**Fifth question:**

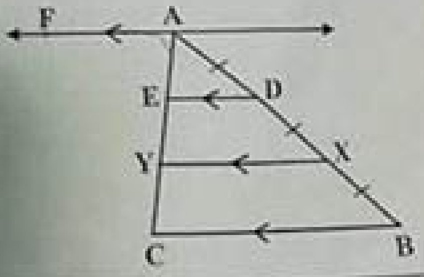
a) In the opposite figure:




$\overrightarrow{AD} \parallel \overline{BC}$ , $m(\angle DAB) = 50°$ and $m(\angle DAE) = 70°$

Find : 1) $m(\angle C)$ 2) $m(\angle B)$

b) In the opposite figure:




$\overleftrightarrow{AF} \parallel \overleftrightarrow{DE} \parallel \overleftrightarrow{XY} \parallel \overleftrightarrow{BC}$ , $AC = 18$ cm.

and $AD = DX = XB$

Find the length of $\overline{EC}$ ( give reason )

| | | |
|---|---|---|
| Alexandria Governorate<br>A gamy Educational Zone<br>Inspector of math's | امتحان الفصل الدراسي الأول<br>٢٠١٨ / ٢٠١٧<br>First Preparatory grade | Subject/ geometry<br><br>Time (two hours) |

## (1) Complete :

1) The acute angle complements .................. angle.

2) If the two straight lines intersect, then each two vertically opposite angles are .................. In measure.

3) The two bisectors of two adjacent supplementary angles are ..........

4) If the perimeter of a square is 28 cm, then its area = ........... $cm^2$

5) The perpendicular on the midpoint of a line segment is called ..........

## (2) Choose the correct answer :

1) If△ ABC =△XYZ m (<x) + m (<Z) = 130, then m (<B) = ................

( 30˚, 50˚, 75˚, 100˚)

2) The measure of straight angle = .................. ˚

( 90˚, 120˚, 75˚, 180˚)

3) If two straight lines are parallel to a third straight line, then the two straight lines are ...........

(Parallel , perpendicular , equal , intersecting)

4) If m (<A) = 90˚, then m (reflex <A) = ..............

(270˚, 180˚, 90˚, 0˚)

5) If the ratio between two supplementary angle 2:3 then the measure of the smaller angle = ..............

(20˚, 72˚, 36˚, 108˚)

6) The sum of measure of the accumulative angles at a point equal

.............. (180˚, 360˚, 90˚, 270˚)

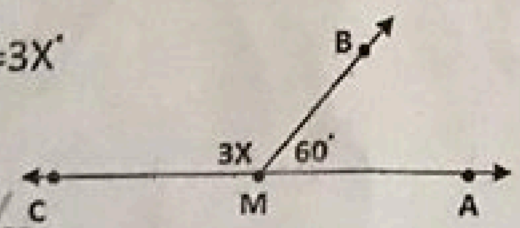
الورقة الثانية

**(3)** ***(A) In the opposite figure :***

If $\overline{MB} \cap \overline{AC} = \{M\}$, m ( < AMB) = 60˚, m(<BMC)=3X˚

then find the value of X

3x + 60 = 180
3x = 180 - 60
3x = 120
x = 120/3 = 40°

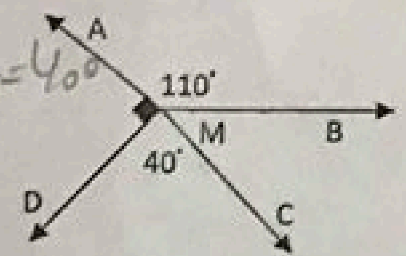



***(B) In the opposite figure:***

m (<AMB) = 110˚, m (<AMD) = 90˚, m (< DMC) = 40˚

Find m (< BMC)

360 - (110 + 40 + 90)
= 120°




---

**(4)** (A) by using your geometric instruments draw

< ABC whose measure 80˚ , Draw $\overrightarrow{BF}$ to bisect the angle .

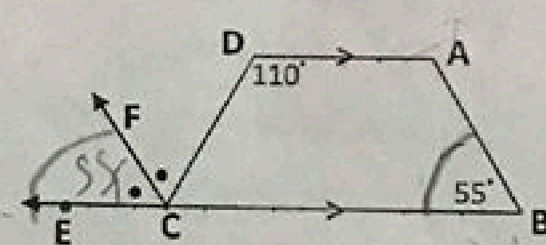
**(B) In the opposite figure:**

$\overline{AD}$ // $\overrightarrow{BE}$, $\overrightarrow{CF}$ bisect < DCE, E ∈ $\overrightarrow{BC}$

m (<ABC) = 55˚ , m ( < ADC) = 110˚

Is $\overline{AB}$ // $\overrightarrow{CF}$? , why?

yes




(corresponding)

---

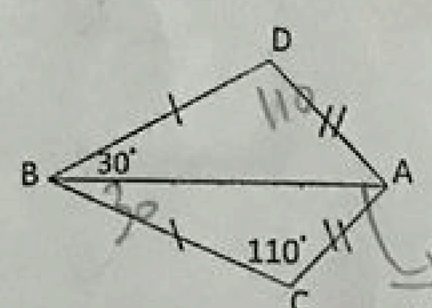
**(5)** (A) State three cases of congruency of two triangles.

(B) In the opposite figure:

m(<DBA) = 30˚ , m (<C) = 110˚

Does △ ABD ≡ △ACB ? Why?

Then find m (<D) , m ( < CAB) .




180 - (110 + 30)
= 180 - 140
= 40°

انتهت الأسئلة

Alexandria Governorate
East Educational Zone
Mathematics directing

First Term exam for
English language schools
January - year 2017 - 2018

Grade : Middle one.
Time : Two hours
Subject : Geometry

هذا الاختبـــار في ورقتيـــن

Answer the following questions

Allows the use of a calculator

**1st question: Choose the correct answer from those given:**

1) The measure of the supplementary of the angle of measure $30^\circ =$ ......... $^\circ$.
{ 30 , 60 , 120 , 150 }

2) The image of the point A(- 4 , 3) by transformation ( - 1 , - 4 ) is ......
{ (-5, -7) , (-5,-1) , (-7,3) , (-3,-1) }

3) If two lines are perpendicular to a third line, then they are ......
{Perpendicular , intersecting , parallel , congruent}

4) If the ratio between the measure of two supplementary angles is 7:11 then the measure of the smaller = .....$^0$
{35 , 55 , 70 , 110 }

5) The length of the diameter of a circle = 8 cm. then its area = .... $\pi$
{ 4 , 8 , 16 , 64 }

6) If $\Delta ABC \equiv \Delta XYZ$ then ....
{ $AX = YZ$ , $BC = XZ$ , $XY = CA$ , $ZY = CB$ }

**2nd question: Complete the following :**

1) If a straight line intersects two parallel lines then each two corresponding ang[les] are ......

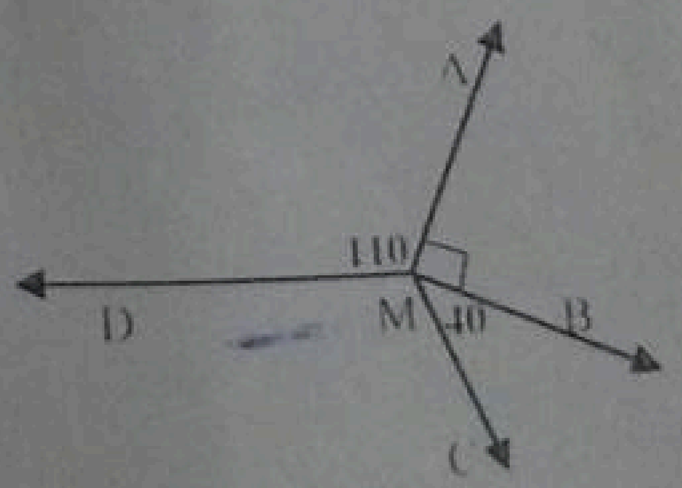
2) Two triangles are congruent if two sides and .......... in one are congruent to their corresponding parts in the other.

3) If $m(\angle A) = 110^0$ then $m(reflex\angle A) =$ ........$^0$

4) If the length of a side in a cube = 6 cm. then its total surface area = ....c[m²]

5) If $\Delta ABC \equiv \Delta XYZ$ , $m(\angle A) + m(\angle B) = 140^0$ , then $m(\angle Z) =$ .........$^0$

**3rd question: a) In the opposite figure:**




$m(\angle AMB) = 110^0$ , $m(\angle AMD) = 90^0$ , $m(\angle CMB) = 40^0$

Find $m(\angle CMD)$ by steps.

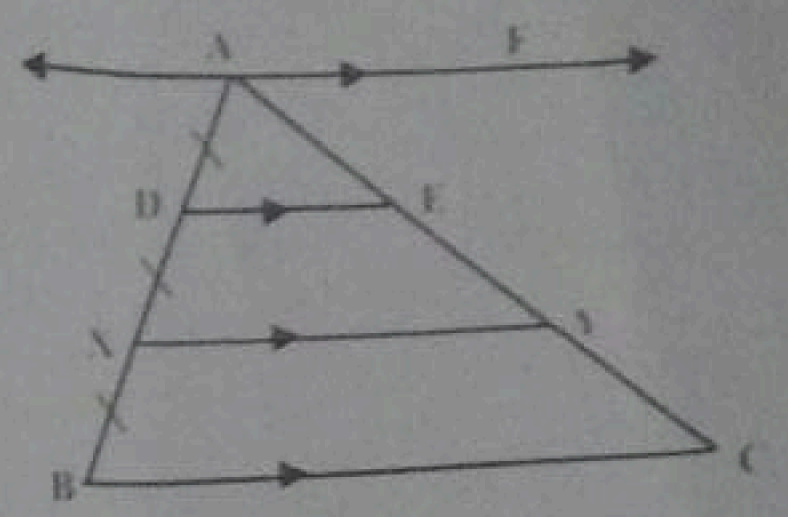
b) Using the geometric instruments draw angle ABC of measure $120^\circ$ and bisect $\overrightarrow{BD}$ then find by measuring m $\angle ABD$ (don't remove the arcs)

بقية الاسئلة في الورقة
الثانية

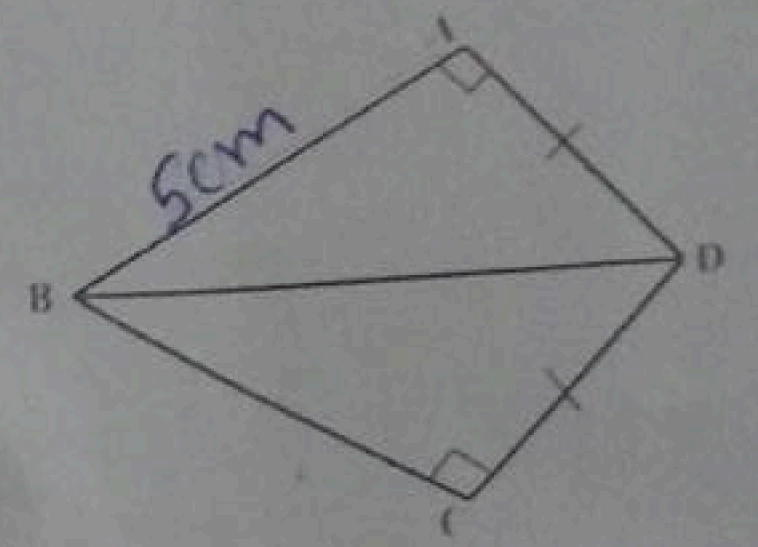
الورقة الثانية

## 4th question:

**a)** In the opposite figure $AF \parallel DE \parallel XY \parallel BC$,
AD=DX=XB, AC=9CM.
Find the length of $AY$ giving the reason.

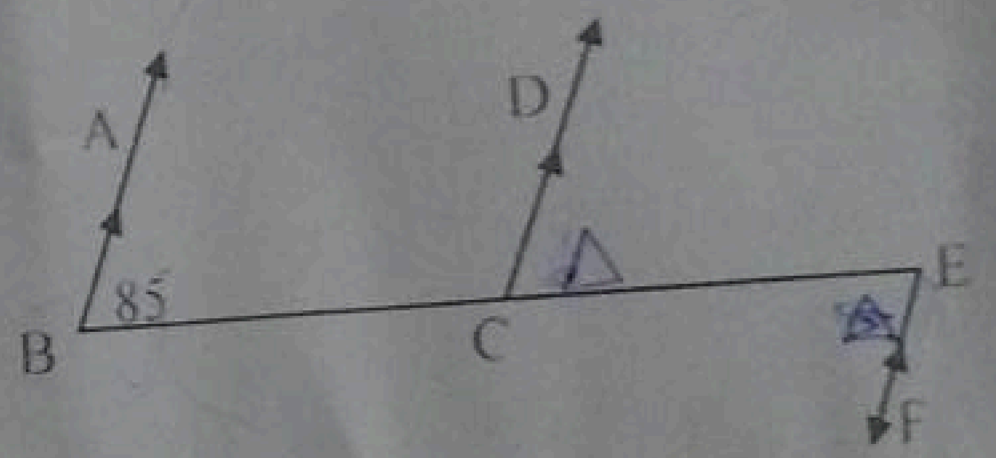


**b)** In the opposite figure:
CD = AD , AB = 5 cm. ,
$m(\angle BAD) = m(\angle BCD) = 90^0$
1) Deduce that $\Delta ABD \equiv \Delta CBD$
2) Find the length of $\overline{CB}$

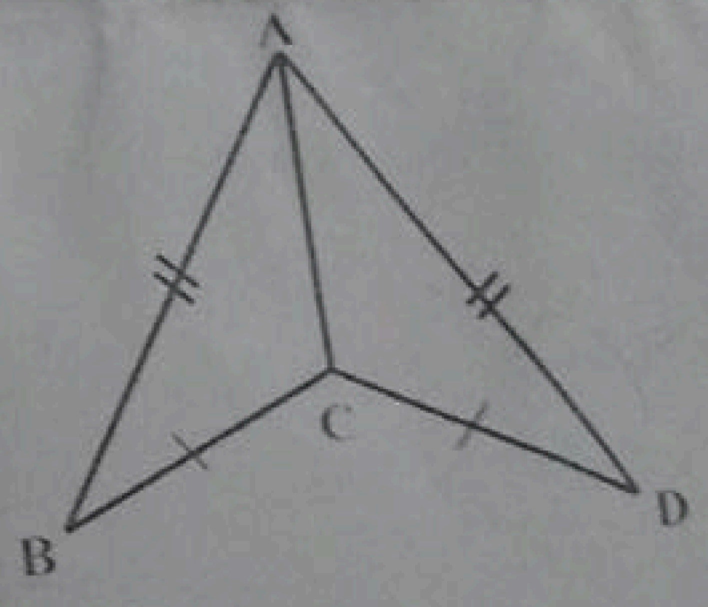



## 5th question:

**a)** In the opposite figure:
$\overrightarrow{BA} \parallel \overrightarrow{CD}, \overrightarrow{CD} \parallel \overrightarrow{EF}$ $m(\angle ABC) = 85^0$
Find $m(\angle CEF)$




**b)** In the opposite figure:
$AB = AD$ , $BC = DC$
Deduse that $AC$ bisects $\angle BAD$




انتهت الاسئلة

Monofia governorate
Shiben elkom educational zone
Language Formal Schools

1st prep. school
Time : 2 hours

Final exam of geometry 2017/2018
First term
(Answer all the following questions)

1) Choose the correct answer :

1) The acute angle supplements ................. angle .

a ) acute  b ) obtuse  c ) right  d ) reflex

2) If two adjacent angles are supplementary , then their outer sides are .................. .

a ) parallel  b ) perpendicular  c ) congruent  d ) on the same straight line

3) If $\overline{AB} \equiv \overline{XY}$ , then AB - XY = .................. .

a ) 0  b ) 1  c ) -1  d ) 2

4) Which of the following sentences is wrong for all rectangles?

a ) Opposite sides are congruent  b ) Opposite sides are parallel

c ) All angles are right  d ) The diagonals are perpendicular

5) The axis of symmetry of a line segment is the straight line ................ .

a ) perpendicular to it from its midpoint  b ) perpendicular to it  c ) bisect it  d ) parallel to it

6) The best unit to measure the area of a room is ................. .

a ) $mm^2$  b ) $cm^2$  c ) $m^2$  d ) $km^2$

2) Complete each of the following :

1) The sum of measures of the accumulative angles at a point is ................ .

2) The two straight lines parallel to a third straight line are .............. .

3) Two triangles are congruent if two sides and the ..................of one triangle are congruent to the corresponding parts of the other triangle .

4) If the ratio between measures of two complementary angles 4 : 5 , then the measure o the smaller angle is ................. .

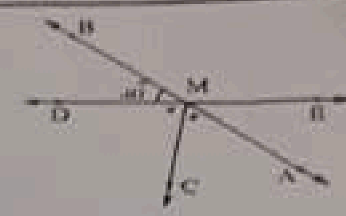
5) If the polygon ABCD ≡ the polygon LMNO , then AC = .................. .

3) a ) In the opposite figure :

$\overleftrightarrow{AB} \cap \overleftrightarrow{DE} = \{M\}$ , m(∠DMB) = 40°

, $\overrightarrow{MC}$ bisects (∠DMA) Find with reason :

m(∠EMA) , m(∠DMC) .



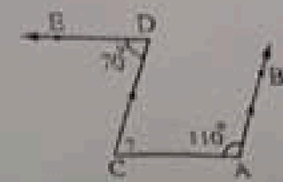

40°  70°

b ) In the opposite figure :

$\overrightarrow{AB}$ // $\overline{CD}$ , m(∠BAC) = 110°

m(∠EDC) = 70° .

1. Find : m(∠ACD) .
2. Is $\overline{AC}$ // $\overrightarrow{DE}$ ? Why ?




4) a ) By using the geometrical tools , draw (∠ABC) of measure 100° , then bisect it .

(Don't remove the arcs)

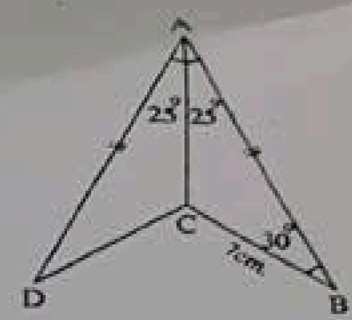
b ) In the opposite figure :

m(∠B) = 30° , AB = AD , BC = 7cm

m(∠BAC) = m(∠DAC) =25°

Give reasons of two congruent triangles ABC , ADC

Then , find m(∠D) and the length of $\overline{DC}$ .




30°  7cm

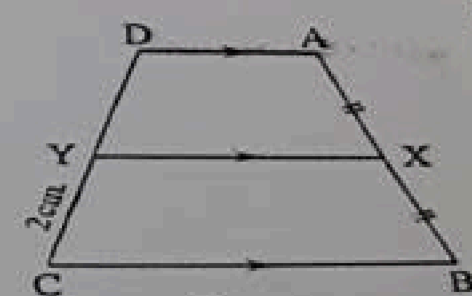
5) a ) In the opposite figure :

$\overline{AD}$ // $\overline{XY}$// $\overline{CB}$,

AX = XB , CY = 2 cm

Find with reason the length of $\overline{CD}$

4 cm



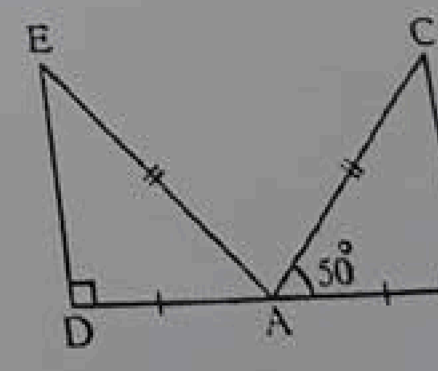

b ) In the opposite figure :

m(∠B) = m(∠D) =90°

EA = CA , AD = AB ,

m(∠BAC) =50°

Deduce : m(∠EAD)




50°

Finished

With our best wishes

Menofia governorate
Sadat educational zone
Language Formal Schools

$1^{st}$ prep. school
Time : 2 hours

Final exam of geometry 2017/2018
First term
(Answer all the following questions)

1) Choose the correct answer :

1) The acute angle supplements .................. angle .
a ) acute b ) obtuse c ) right d ) reflex

2) If two adjacent angles are supplementary , then their outer sides are .................. .
a ) parallel b ) perpendicular c ) congruent d ) on the same straight line

3) If $\overline{AB} \equiv \overline{XY}$ , then AB - XY = .................. .
a ) 0 b ) 1 c ) -1 d ) 2

4) Which of the following sentences is wrong for all rectangles?
a ) Opposite sides are congruent b ) Opposite sides are parallel
c ) All angles are right d ) The diagonals are perpendicular

5) The axis of symmetry of a line segment is the straight line .................. .
a ) perpendicular to it from its midpoint b ) perpendicular to it c ) bisect it d ) parallel to it

6) The best unit to measure the area of a room is .................. .
a ) $mm^2$ b ) $cm^2$ c ) $m^2$ d ) $km^2$

2) Complete each of the following :

1) The sum of measures of the accumulative angles at a point is .................. .

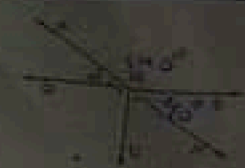
2) The two straight lines parallel to a third straight line are .................. .

3) Two triangles are congruent if two sides and the ..................of one triangle are congruent to the corresponding parts of the other triangle .

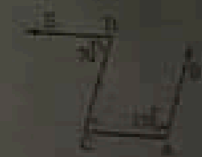
4) If the ratio between measures of two complementary angles 4 : 5 , then the measure of the smaller angle is.................. .

5) If the polygon ABCD ≡ the polygon LMNO , then AC = .................. .

3) a ) In the opposite figure :
$\overleftrightarrow{AB} \cap \overleftrightarrow{DE} = \{M\}$ , m(∠DMB) = 40°
, $\overrightarrow{MC}$ bisects (∠DMA) Find with reason :
m(∠EMA) , m(∠DMC) .

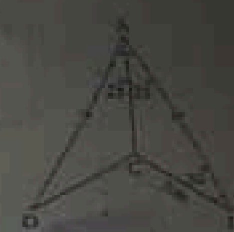


b ) In the opposite figure :
$\overrightarrow{AB} // \overline{CD}$ , m(∠BAC) = 110°
m(∠EDC) = 70° .
1. Find : m(∠ACD) .
2. Is $\overline{AC} // \overrightarrow{DE}$ ? Why ?

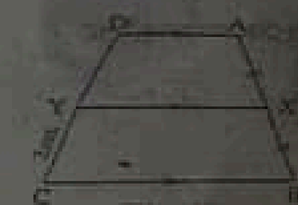


4) a ) By using the geometrical tools , draw (∠ABC) of measure 100° , then bisect it .
(Don't remove the arcs)

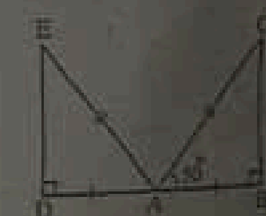
b ) In the opposite figure :
m(∠B) = 30° , AB = AD , BC = 7cm
m(∠BAC) = m(∠DAC) = 25°
Give reasons of two congruent triangles ABC , ADC
Then , find m(∠D) and the length of $\overline{DC}$ .



5) a ) In the opposite figure :
$\overline{AD} // \overline{XY} // \overline{CB}$ ,
AX = XB , CY = 2 cm
Find with reason the length of $\overline{CD}$



b ) In the opposite figure :
m(∠B) = m(∠D) = 90°
EA = CA , AD = AB ,
m(∠BAC) = 50°
Deduce : m(∠EAD)



Finished
With our best wishes

| مديرية التربية والتعليم بالقليوبية | | | |
|---|---|---|---|
| الأول الإعدادي | الصف | امتحان الهندسة ( لغات ) | توجيه الرياضيات |
| ساعتان | الزمن | الفصل الدراسي الأول 2021 /2022 | |

**Q1 Choose the correct answer :**

1) The measure of the supplement of the angle whose measure $40^0$ is .....(50 , 140 , 90 , 180 )
2) If two straight lines parallel to a third, then the two straight lines are ..........
   (parallel , perpendicular , congruent , intersecting)
3) In the opposite figure $m\,(\hat{x})$ = .......$^0$ (60 , 30, 90 , 45 )



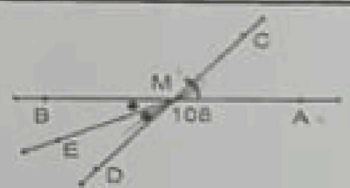

4) $\overline{AB} \equiv \overline{CD}$ , $AB = 5\ cm.$ , then $AB - CD$ = ...... (0 , 1 , 5 , 10 )
5) $\triangle\, ABC$ is right angled triangle at $B$ , $AB = 3\ cm.$ And $BC = 4\ cm.$ ,
   then its area = ......$cm^2$ (12 , 6 , 24 , 14 )
6) The perimeter of the rhombus where its side length 10 $cm.$ = ......... $cm.$ (100 ,50 , 20 , 40 )

**Q2 Complete each of the following:**

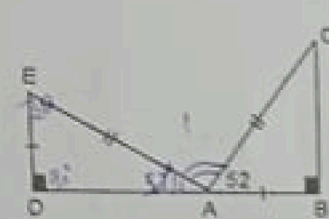
1) The sum of measures of accumulative angles at a point = ......$^0$
2) Two triangles are congruent if each ........are congruent with corresponding parts of the other
3) The complement of an angle of measure $25^0$ is an angle of measure ......... $^0$
4) If $\triangle\, ABC \equiv \triangle\, XYZ$ , then $m(C\hat{B}A)$ = ......................
5) $ABCD$ is parallelogram , $m(\hat{A}) = 55^0$ , then $m(\hat{B})$ =.........$^0$

**Q3**

a) <u>In the opposite figure</u>: $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$ , $\overrightarrow{ME}$ bisects $(B\hat{M}D)$ and $m\,(A\hat{M}D) = 108^0$ .
   Find : $m\,(B\hat{M}D)$ , $m\,(E\hat{M}D)$ , $m\,(A\hat{M}C)$ and , $m\,(B\hat{M}C)$

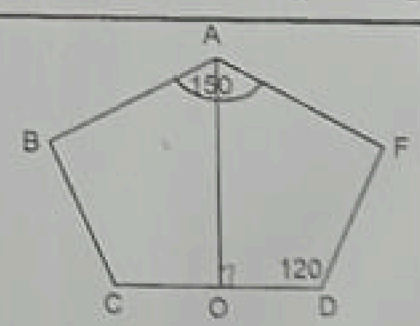



b) <u>In the opposite figure</u>:
   mention the case and the conditions of congruence between $\triangle\, ABC$ and $\triangle\, EAD$ . then Find : $m\,(E\hat{A}D)$ and $m\,(E\hat{A}C)$

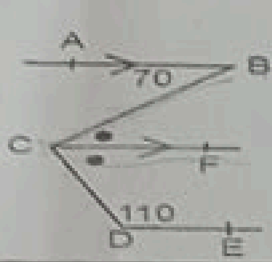



**Q4**

a) <u>In the opposite figure:</u> The figure $ABCO \equiv$ the figure $AFDO$ , O $\in \overline{CD}$ and $CD = 8\ cm.$ , $m\,(F\hat{A}B) = 150^0$ and $m\,(F\hat{D}C) = 120^0$
   Find : $m\,(B\hat{C}O)$ , $m\,(F\hat{A}O)$, $m\,(A\hat{O}D)$ and the length of $\overline{CO}$

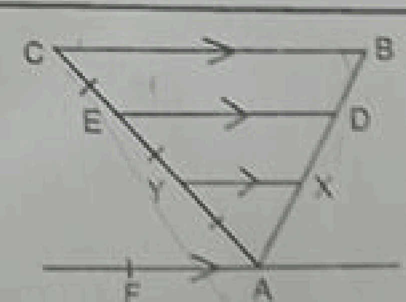



b) <u>In the opposite figure:</u> If $\overleftrightarrow{AB}$ // $\overleftrightarrow{CF}$ , $m\,(A\hat{B}C) = 70^0$, $m\,(C\hat{D}E) = 110^0$.
   Find: $m\,(B\hat{C}F)$ . and why $\overleftrightarrow{CF}$ // $\overleftrightarrow{DE}$ ?




**Q5**

a) <u>In the opposite figure:</u> $\overleftrightarrow{AF}$ // $\overleftrightarrow{XY}$ // $\overleftrightarrow{DE}$ // $\overleftrightarrow{BC}$ ,
   $AY = YE = EC$ , $AY = 4cm.$, $AX = 3cm$ and the perimeter of $\Delta ABC = 30cm.$. Find the length of $\overline{BC}$




b) Draw $\Delta ABC$ in which AB= 3cm , BC = 5cm , and AC = 7cm ,
   then draw $\overrightarrow{BD}$ bisect ( $A\hat{B}C$) to intersect $\overline{BC}$ at D .
   Find by measuring ( $A\hat{B}D$).     ( don't remove the arcs)